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An Address.[1]

PROFESSIONAL RESPONSIBILITY.

By T. Y. NELSON,

President, New South Wales Branch of the British Medical Association.

That other world within the microcosm, the silent reasonable world, where the only action is thought and thought is free from fear.

—*"Microcosmographia Academica."*

If there is any virtue in a presidential address it is that it affords an opportunity for reflection and thought to the members of a profession whose ordinary activities are so crowded with action and incident that there is little time for that contemplation which is occasionally necessary if we are to know where we are going.

I wish to thank you most sincerely for the honour of election to the presidential chair, and as one who feels rather conscious of the responsibilities of that office, I would ask you to reflect with me on some of the responsibilities that face the profession. In doing so, I do not wish to present to you a "changing face of medicine", because I believe that it is only the techniques of medicine that change, and that the responsibilities remain the same.

[1] President's address read at the annual meeting of the New South Wales Branch of the British Medical Association on March 25, 1954.

Browning refers to:

This white bearded sage, who squeezes now
The berried plant, is Phoibo's son of fame,
Asclepios, whom my radiant brother taught
The doctrine of each herb and flower and root
To know their secret'st virtue and express
The saving soul of all.

Why should we be amused? Browning was merely describing the physician of a period; and the surgeon could still be described as the man

Who so has soothed
With lavers the torn brow and murdered cheeks
And laid the strips and jagged ends of flesh
Even once more, and slacked the sinew's knot
Of every tortured limb—that now he lies
As if mere sleep possessed him.

The techniques have changed, but the ideals and responsibilities remain the same. But techniques are not the most important things in medicine, and in this highly technical age we must beware of becoming mere technicians—"and by a mere technician I mean a man who understands everything about his job except its ultimate purpose and its place in the order of the universe" (Livingstone).

If we would avoid this pitfall, we must have a clear conception of the place that a physician should occupy in our society.

Responsibilities in Practice.

Many would say that above all he must be free in order to exercise judgement in the interests of his patients, and it is true that for years great prominence has been given

in all our discussions to the maintenance of our professional freedom; but, as Fox has rightly pointed out, this freedom on which we insist carries with it the inescapable responsibility of service, and if we lose sight of this ideal of service to the community we shall have lost the right to freedom.

This State has recently had the privilege for the first time in its history of a visit from a reigning monarch, and there must be very few who have not been moved by this historic occasion. If service to the community is to be one of our ideals, we could have no better example than the dedication of this Sovereign to the service of her people and the cheerful acceptance of tremendous responsibilities.

I think the sense of personal responsibility to his patients is the one most readily accepted by the ordinary decent doctor, and this is a relation which many people are anxious to preserve. It is the basis of our conception of medical practice, and has been responsible for many of the changes and developments that have taken place in making the service of medicine available to the community.

For a good part of my professional life medical men were willing to cooperate with the friendly societies in a form of service which is no longer one of our techniques. I am not one of those who found anything degrading in this form of service, and I believe that in its right proportion—that is, as part and not the whole of general practice—it provided a very necessary and useful arrangement by which medicine was brought to a solid and thrifty section of the community who deserved the best we could give them. There were many reasons why it should go; but we must remember that it did represent a concessional service on the part of the profession, and that these concessional services are fast disappearing. In many respects its place has been taken by the Pensioner Medical Service. Our responsibility now is to see that this new system gives a better service to the community than did its predecessor.

Again, when the techniques of medicine expanded to such an extent that no one individual could cover them all and give a proper service to his patients, "group practice" arose, and as long as that is the idea behind a group in practice it will be a good thing for the community.

One could instance other forms of medical practice and other ways in which this responsibility of service has been accepted; but I will refer to only one, and that was due to the vision of a great Australian who was not a medical man. The Flying Doctor Service has really achieved what Flynn set out to prove was possible—that is, to provide "a mantle of safety over the whole continent". It has grown until there are now twelve bases throughout the Commonwealth and 736 outposts connected with them. In this service the medical profession has been enthusiastic in cooperation and has helped to build up a scheme which is unique to this country, and in which we should take considerable pride.

Responsibilities to Hospitals.

But there are other responsibilities than the purely personal one between the doctor and his patient. Most practitioners in this State are involved in some way on the staff of a hospital. They then become part of a group or team and assume added responsibilities. This means that they must be prepared to work as a group, and not to regard the holding of a hospital appointment as a mere means of continuing the treatment of their own private patients. This concept of a group with responsibilities to the institution is what lifts a hospital above the status of a mere "nursing home", and should make it the centre of medical activity of a district. The staff must, by their pooled professional knowledge, be in a position to advise boards on professional problems, and it has been the aim of the Branch Council to endeavour to have this principle accepted by the hospital boards.

In the United States of America and Canada there are minimum standards on which the efficiency of a hospital is judged, and as we have recently heard from Dr. Malcolm MacEachern, these requirements are applied to hospitals of even 25 beds before proper accreditation is given. It is by interesting themselves in these standards, by improving records, by reducing unnecessary stay in hospital and by holding consultations and group discussions to inquire into mortality rates and to review clinical problems, that hospital staffs can impress their boards. I would suggest that no hospital staff is accepting its responsibilities if it does not hold regular meetings with these objects in view. If medical staffs can bring the weight of their opinions before their boards in these professional matters, I feel that they will have gone a long way towards achieving the medical representation that is their right, and that is so essential for the proper management of hospitals.

The changing conditions in the larger hospitals inevitably bring added problems, and it is essential that the staffs should interest themselves and assume some responsibility in their evolution. We have not adopted the "hierarchical" or pyramidal system of staffing in the clinical departments of our hospitals—a system which places a greater responsibility on a few individuals—but have followed the British system of teams or "firms". There has been considerable development in this direction, especially since the last war, and there is no doubt of the advantages to both senior and junior members of the staff; and I believe that for the main part the visiting system, cumbersome as it appears to the hospital administrator, has undoubted advantages which are worth preserving. But in this system there are divided loyalties and divided responsibilities between hospital and private practice, and as a result significant changes have occurred in the more essentially "hospital" services of radiology and pathology. It has become evident that these departments demand the whole attention and effort of the people staffing them to the exclusion of private practice, and a system of whole-time appointments has emerged with an undoubted improvement in efficiency. This is not to say that the same results would follow if this principle was applied to the clinical departments, and a judicious blending of whole-time teaching appointments with a visiting staff seems to be the best answer.

Government Health Plans.

It would be an evasion at this time not to make some reference to the impact of recent legislation on medical practice. In the "horse and buggy" days the doctor was the complete individualist who served his patient and no one else. But gradually and inevitably, as society became more complex, the public health became the concern of governments. As medicine became more involved, its arts became more intricate and the cost of medical care became quite out of accord with the ordinary standard of living, and so responsible governments were faced with the problem of providing some material assistance to the public. It is inevitable that in this country some form of State aid should have developed, and the responsibility that faces the profession is to see that these plans of the government do not interfere with our traditional method of practice; this inevitably raises the question of fees.

Responsibility in Fees.

There is a responsibility in the matter of fees as there is in every phase of medical activity, and it is one of the difficult problems that face the young man entering practice.

The evolution of medical fees has been a curiously haphazard affair since the days when John Hunter assessed his fees at what the patient was pleased to pay him. On that subject it is only a few years since a lawyer eminent in the United States of America wrote as follows:

> From days of old the doctor held no public office but his service was—as the judges put it—"clothed with a public interest" . . . As one who followed a common calling the physician held himself out to serve all in need to the limit of his capacity. Nor was inability to pay a valid excuse for refusal of service. The law recognised him as a kind of unofficial servant of the community and exempted him from the ordinary rules of the market. . . . The law went to lengths unknown elsewhere to make certain that the common health was

served. In respect to the wares of trade the law of single price usually holds; a commodity is available to all who wish to purchase on exactly the same terms. To ensure adequacy of service a special rule was decreed for the physician—he was permitted to charge different fees from patients differently situated. The sliding scale, as much later it came to be called, served a definite social end . . . charges were to be assessed in terms of ability to pay.

It appears to me that there is a growing tendency to regard medical fees as being comparable to other charges in the community; but, in the evolution of the fees of private practice, I do not believe that this principle has ever been accepted. Fees have evolved in such a way that it has been found by experience what constitutes a reasonable fee, and this takes into account concessions, omissions to charge, reductions, bad debts and above all the ability of the patient to pay.

One of the difficult tasks undertaken by the Branch Council is to arbitrate on those fees which are disputed by patients, and in these cases there is only one yardstick to use—that is: "Is the fee reasonable?"

It is of interest that we find this word "reasonable" applied to fees in the literature of over 100 years ago.

Colonial Secretary's Office,
31st October, 1844.

The Deputy Inspector-General of Hospitals.

Sir:

With reference to a charge amounting to twelve pounds twelve shillings made by Dr Machatty for visiting Lachlan 70 miles from Bathurst and setting a compound fracture, included in the unfixed contingent abstract of the Mounted Police Corps for the quarter ended 30th Sept. last, I do myself the honour to request your opinion as to the reasonableness of the same.

I have etc.
W. Elyard Jnr.

It will be a bad day for the preservation of private practice if these ideas are regarded as outworn shibboleths; and the nearer we approach the condition where fees are subject to the "ordinary rules of the market", the nearer we approach the destruction of private practice as we know it. So that there is a responsibility on the part of the profession in this matter to be reasonable.

Other Responsibilities.

It may be thought that I have referred to most of the responsibilities that the ordinary medical man faces; but as our generation has felt the impact of two world wars, I would suggest that there is a responsibility, not to wait for such a crisis and then placidly accept participation in it as so many of us did, but to realize how much the medical services owed to those who were prepared to work during the times of peace and prepare themselves for the emergency.

If we can think for a moment in a wider sphere, we owe something not only to our own Association, but to the larger society that embraces the medical professions of the civilized world. The World Medical Association is not yet well known to the profession in this country, but its implications are so important that we cannot afford to be indifferent to its activities.

Finally, let me conclude by quoting some words of Sir Richard Livingstone that cover what I have been trying to put before you:

> Men are born to four citizenships: they should be able to live as good members of their family, of their community, of their nation and of the whole human society. Citizenship means that we must learn to live with others and respect their rights and feelings. It also means that we have to play a part in the community, often accept the decision of a majority which goes against our private interests, opinions and desires. Democracy, more than any other form of government, needs good citizenship. Under an absolutism or a dictatorship men are forced to fall in line. But in a democracy things are not so simple. Freedom is of the essence of democracy: the completer the democracy, the completer the freedom. But it has to be the freedom of service self-chosen and sometimes of sacrifice self-imposed.

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BENIGN LYMPHOCYTIC MENINGITIS.[1]

By J. A. R. MILES.

From the Institute of Medical and Veterinary Science, Adelaide.

WALLGREN in 1925 described an acute, febrile, non-fatal illness characterized by the signs and symptoms of meningeal irritation and sometimes associated with respiratory tract infection. He called the condition "acute aseptic meningitis" and thought that it would prove to be an ætiological entity. However, since Armstrong and Lillie in 1934 isolated the first organism associated with this syndrome, it has been shown that it may be caused by a number of different agents. The terms "aseptic meningitis", "benign lymphocyte meningitis" and "meningo-encephalitis" are now used impartially to cover the numerous cases in which there are signs of meningeal irritation, pleocytosis in the cerebro-spinal fluid (either predominantly lymphocytes or a mixture of lymphocytes and polymorphonuclear cells), and from which no bacteria or fungi can be isolated from the cerebro-spinal fluid by ordinary culture techniques. Because the term "acute aseptic meningitis" has since been used for other conditions, in this paper the alternative "benign lymphocytic meningitis" is preferred.

Such cases vary from those in which the signs and symptoms suggest meningitis with little encephalitis to cases in which encephalitic symptoms predominate. In all types the prognosis is usually regarded as good, although a few fatal cases occur. At present in a high percentage of cases the causative agent is never identified, but, as more work is done on this syndrome it is becoming possible to differentiate more of the causes and to show some relation between the causal agent, the epidemiology and the clinical picture.

Benign lymphocytic meningitis is a syndrome which may be caused by a variety of agents. Several of them normally cause symptoms other than or additional to those of meningo-encephalitis, but some appear to be mainly recognized by their attack on the meninges and brain. On the other hand, the syndrome must be differentiated strictly from tuberculous meningitis and from torulosis of the meninges, both of which may have an acute onset reminiscent of that usual in aseptic meningitis and a similar cerebro-spinal fluid picture in the early stages. It is necessary to differentiate the post-infective encephalitides, which are now usually regarded as allergic rather than as directly due to the agent of the preceding disease, other forms of encephalitis with a prognosis much graver than that of an aseptic meningitis, and cerebral thrombophlebitis. This leaves a substantial residue of cases due either to leptospiræ or to viruses; this is composed of (i) mild forms of diseases often more severe, (ii) cerebral forms of diseases not normally involving the central nervous system, and (iii) diseases ordinarily giving the aseptic meningitis syndrome.

Non-Paralytic Poliomyelitis.

There can be no doubt that the commonest tentative diagnosis made by a practitioner when called to this type of case is poliomyelitis. During the course of a poliomyelitis epidemic this diagnosis is the obvious one, but, in the absence of cases of paralytic poliomyelitis in the same district, the only way of definitely establishing such a diagnosis is by laborious laboratory investigation.

[1] Read at a meeting of the South Australian Branch of the British Medical Association on October 29, 1953.

Typically, poliomyelitis shows a diphasic course with an initial febrile episode often termed the "minor illness", in which there is usually no evidence of involvement of the central nervous system (Figure I). In the abortive case this is the only illness and a diagnosis of poliomyelitis can be established only by the isolation of the virus and the demonstration of a rising titre of neutralizing antibody to the homologous virus. In both paralytic and non-paralytic cases the "minor illness" is followed by a short period of apparent recovery and then by a second febrile episode with signs of central nervous system involvement. In the presence of frank paralysis the diagnosis in such a case is obvious. In non-paralytic cases the diagnosis is not so easily made, except during an epidemic. The cerebro-spinal fluid changes are important. Usually there is a modest increase in cells to between 12 and 100 per cubic millimetre, predominantly lymphocytes, and there is a slight increase in protein. Sometimes the cell count is higher, although a count of over 1000 per cubic millimetre is evidence against the diagnosis of poliomyelitis. It is usually held that non-paralytic poliomyelitis should not be diagnosed in the absence of a pleocytosis in the cerebro-spinal fluid. When there is an epidemic of poliomyelitis in the district and a patient presents with the typical diphasic course and pleocytosis is detected in the cerebro-spinal fluid, then a diagnosis of non-paralytic poliomyelitis is justified. Otherwise it can be established only in the laboratory.

Routine virus isolation may soon become practicable by the use of the developments of the technique, started in Enders's laboratory, for growing poliomyelitis viruses in tissue culture. Neutralization tests can be performed, although they are laborious and costly. Normally antibody to the virus is present by the onset of the "major illness", and the absence of neutralizing antibody in both acute and convalescent specimens of serum is very strong evidence that the case was not one of poliomyelitis. Often a rise in titre of antibody to the homologous virus between the specimens taken in the acute and convalescent stages can be demonstrated and will establish the diagnosis. However, if the first specimen is not taken very early in the disease there may be no evidence of a rising titre, and then it remains impossible to make a certain diagnosis, although the presence of high titre antibody is strongly suggestive of recent infection.

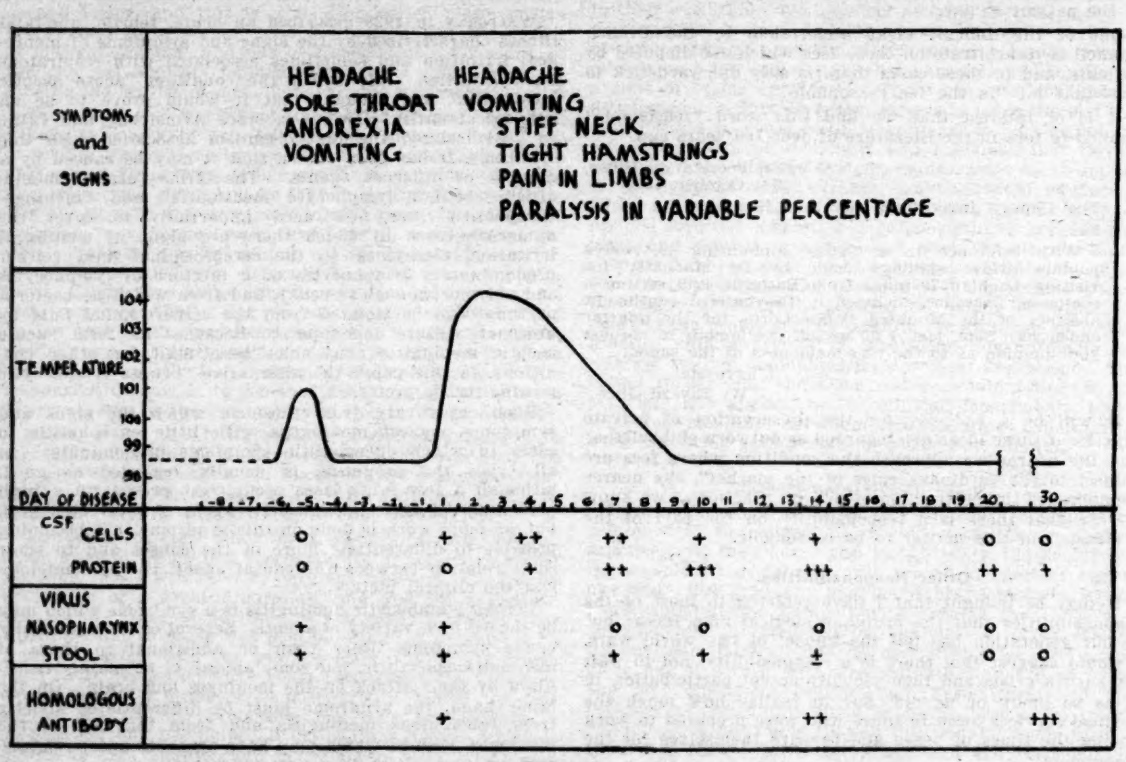

FIGURE I.

Schematic diagram of diphasic type of acute poliomyelitis (after Horstmann, 1949).

Lymphocytic Choriomeningitis.

The virus of lymphocytic choriomeningitis was first isolated in 1933 during the investigation of the St. Louis encephalitis outbreak of that year. It soon proved to be the cause of a substantial number of cases in the United States of America and later in most countries in which suitable investigations were made. In America 11% of 2000 specimens of normal sera were found to contain antibodies to the virus. The virus has never been shown to exist in Australia despite efforts to find it in several States, and no epidemic has been reported which appears likely to have been lymphocytic choriomeningitis, a disease which has a characteristic clinical course and a very characteristic epidemiology. The virus is of medium size—40 to 60 millimicrons in diameter—and is a natural pathogen of the house mouse (*Mus musculus*) and of some other rodents. Man usually appears to become infected by breathing infected dust or when handling trapped infected mice. The incubation period before the initial febrile episode in the disease is short, and so the association between infection and contact with a rodent can frequently be established. The occurrence of an epidemic of the disease in man is closely associated with a focus of the disease in mice, and therefore the cases occur in groups of houses close together, perhaps in one block. There need be no direct contact between the cases. The one point common to all histories is that of living in, or visiting, mouse-infested premises.

The disease is most commonly diphasic, although there may sometimes be three febrile waves. This diphasic onset may be reminiscent of poliomyelitis, although there are usually suggestive differences (Figure II). The first phase is an illness which would ordinarily be diagnosed as influenza, characterized by malaise, fever, weakness and myalgia, but few or no signs of meningeal irritation. The cerebro-spinal fluid is normal at this time and virus can be isolated only from the blood. Usually the temperature falls to normal after three to four days and the patient then feels well for a week or a little longer. A proportion of those infected abruptly become febrile again with severe frontal headache and stiff neck. There is a substantial rise in the number of cells in the cerebro-spinal fluid, counts of a thousand or more cells, mainly lymphocytes, being common. There is a slight rise in the protein level, which may remain increased for some time after the patient appears perfectly well. Usually within a week of the second phase the patient is rapidly recovering, but occasionally there is a relapse with a third febrile wave. Some patients may develop lung consolidation, and there are occasional fulminating cases with a fatal outcome.

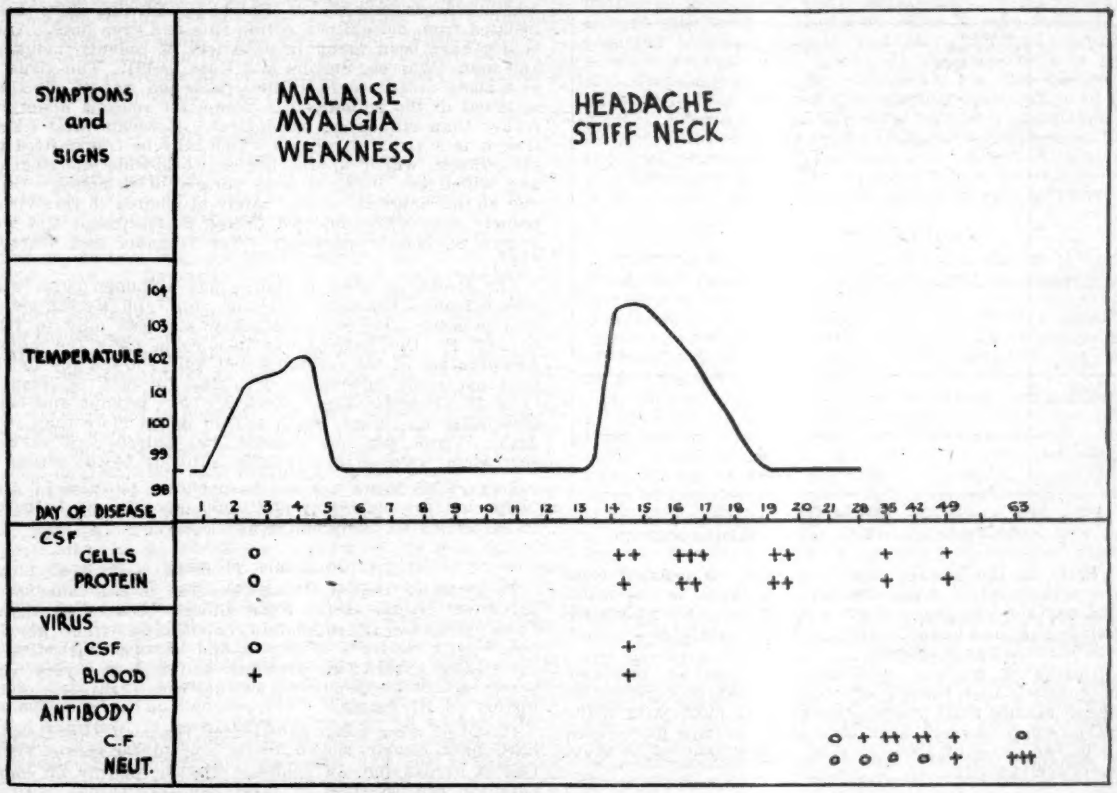

FIGURE II.
Schematic diagram of acute lymphocytic choriomeningitis (after Smadel, 1951).

Thus the initial phase of lymphocytic choriomeningitis is more prolonged and severe than the minor illness in poliomyelitis. There is a longer interval between the febrile periods, and paralysis does not occur. At the beginning of the meningeal phase of the disease virus can be isolated from the blood and cerebro-spinal fluid. Antibodies appear late and complement-fixing antibodies may not be present until three or more weeks after the onset. Neutralizing antibodies do not reach their peak for six to eight weeks after infection.

Lymphocytic choriomeningitis is then a disease with a characteristic clinical course and epidemiology, caused by a known virus. This name should not be used for any other condition.

Mumps.

As far as our investigations have gone we have found mumps to be the most common identifiable cause of lymphocytic meningitis in South Australia. Hamilton, in 1790, was the first to note the association between abnormal neurological signs and parotitis; but complete proof that mumps meningo-encephalitis could occur apart from parotitis had to wait until after the demonstration by Habel in 1945 that the virus could be propagated in the embryonated hen's egg, and the development, largely by Enders and his colleagues, of convenient serological techniques for demonstrating mumps antibody.

Mumps is a disease caused by a virus which is regarded as being a member of the influenza group. It is in nature a disease of man alone, and otherwise only embryonated hen's eggs and certain species of monkey have been shown to be susceptible. The saliva of a patient just before the onset of symptoms and early in the disease contains virus and the usual method of spread is by droplet infection. In settled populations throughout the world the disease is endemic, and from time to time, most commonly in winter and spring, epidemics occur. The highest incidence is in school children, and ordinarily as many of the ten to fourteen years age group are infected as of the five to nine years age group. In this it shows a strange resemblance to the modern picture of poliomyelitis and to infective hepatitis.

Of the more severely ill patients who are admitted to hospital, about 30% show some signs of meningo-encephalitis. During any moderate-sized mumps epidemic a few cases will be found in which the only signs are those of meningo-encephalitis, in the early stages of which

the patient may appear and feel very ill. Figure III shows the typical findings. The duration of symptoms is very variable, but certain features occur regularly. Compared with other causes of aseptic meningitis, mumps usually produces a higher temperature, usually to 103° or 104° F. As a rule the pyrexia is irregular, but the complete remission seen in lymphocytic choriomeningitis does not occur in mumps. The usual symptoms of meningeal irritation are present, and sometimes there is some disorientation or even stupor. There is an increase in the number of cells in the cerebro-spinal fluid, usually with a large lymphocyte excess (90% to 100%). Kane and Enders (1945) reported a mean count of 434 cells per cubic millimetre in 11 cases. There is also a slight increase in protein.

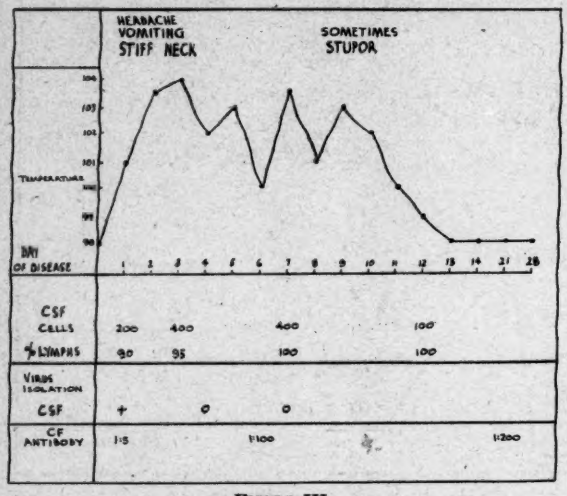

FIGURE III.
Schematic diagram of mumps meningitis.

Early in the disease virus can often be isolated from the cerebro spinal fluid. Paired sera taken in the acute and convalescent phases show a rising titre of complement-fixing and hæmagglutination-inhibiting antibodies which will confirm the diagnosis.

During a mumps epidemic any case of meningo-encephalitis in a heavily affected area can be regarded as one of mumps until proved otherwise. In most parts of the world where surveys have been made, mumps has proved to be the cause of about 10% of cases diagnosed as acute aseptic meningitis.

Herpes Simplex.

The virus of *herpes simplex* is the most ubiquitous of known human viruses. The majority of humans are infected by the virus in infancy and show antibodies for prolonged periods. Normally the virus seems to be able to live almost as a commensal of man, but in some people it will cause localized lesions around the lips when they suffer from a febrile condition, while in others it may cause the unpleasant condition of recurrent herpes quite unassociated with respiratory or any other infection.

In the days when von Economo's disease was epidemic, herpes virus was widely thought to be responsible, but, after this theory became untenable, the majority of virus workers tended to swing to the opposite extreme and to take a completely agnostic attitude to any relation between herpes virus and central nervous system infection.

More recently an association between the virus and a small number of fatal cases of encephalitis has been proved (Smith, Lennette and Reames, 1941; Zarafonetis, Smadel, Adams and Haymaker, 1944), and interest has again been aroused by the possibility that the virus may be responsible for some cases of mild as well as a few cases of fatal encephalitis.

Herpes virus is ubiquitous, so that the isolation of the virus from any material from a patient will not prove that the virus is the cause of the disease; but when a clear-cut rise in titre of antibodies can be shown by complement fixation and neutralization tests on paired acute and convalescent sera, then there is a strong probability that the virus has been responsible for the disease.

If these criteria are accepted, then, at least in Gothenburg, about 5% of cases of aseptic meningitis can be attributed to herpes virus (Alm, 1950).

Encephalomyocarditis.

Encephalomyocarditis virus was originally isolated at post-mortem examination on a captive chimpanzee in Florida. The identical Mengo virus was isolated from a febrile rhesus monkey at Entebbe. Strains have been isolated from mosquitoes, cotton rats and even man. Antibodies have been found in a variety of rodents, monkeys and man (Warren, Smadel and Russ, 1949). The virus is of a small size, 8 to 15 millimicrons, and was at one time included in the poliomyelitis group, for reasons historical rather than clinical or virological. It seems most likely that it is a virus of rodents which may be transmitted by mosquitoes, which approaches a world-wide distribution and which can infect a wide variety of primates. Only one known epidemic can be safely attributed to this virus, namely, that which affected United States troops and was known as Manila three-day fever (Smadel and Warren, 1947).

The disease as seen in Manila had a sudden onset with severe frontal headache and stiff neck, and Kernig's sign was present. The temperature was raised only to 100° to 101° F. One patient was in a coma for a few hours. Examination of the cerebro-spinal fluid showed 100 to 250 cells per cubic millimetre with 20% to 95% of lymphocytes in different cases. Recovery was prompt and complete after an illness which seldom lasted more than four days. Virus was not isolated, but paired sera showed spectacular rises of neutralizing antibody to the virus.

So far this virus has not been shown to exist in Australia, but the possibility of its existence should be borne in mind when likely outbreaks occur.

Coxsackie Viruses.

To establish that a Coxsackie virus is the cause of a particular disease is the more difficult because strains of these viruses can commonly be isolated from normal people with no trace of illness, and because antibodies to the strains usual in an area can be found in a very high percentage of the population of that area regardless of its history of ill health.

However, after much painstaking research, two diseases have been clearly shown to be due to Coxsackie virus. One is herpangina, an epidemic disease, mainly of young children, characterized by fever and sore throat, with at first vesiculation and later ulceration, usually around the pillars of the fauces. Recovery is complete in three to seven days (Huebner *et alii*, 1951). The other is Bornholm disease, symptoms of which are too well known to require any description by me (Findlay and Howard, 1950; Weller, Enders, Buckingham and Finn, 1950). In laboratories a meningeal reaction has been noted in some of the workers who have been infected with the Bornholm types of C virus, but until very recently C virus antibodies had been found in rather a lower percentage of cases of aseptic meningitis than of normal individuals in the same area (Smadel, 1951).

However, in December, 1951, and the early part of 1952, there was in Sydney an epidemic of mild meningo-encephalitis, from several cases of which the same virus was isolated. Because it was found to be pathogenic only for suckling mice it was regarded as a Coxsackie virus. A number of patients from the epidemic did show rising titres of antibodies to the virus, and the evidence strongly suggests that the virus was responsible for the disease (Stanley, Dorman and Ponsford, 1953). It is interesting to note that antibodies to this virus were absent from pooled sera from the Sydney area before December, 1951,

but concurrently with the onset of the epidemic, antibodies to the virus appeared in pooled sera in the Sydney area. These are still present, although at a much reduced titre (Stanley, 1953). The virus is substantially different from other Coxsackie viruses, and despite some serological relationship to group B strains it has been designated Coxsackie group C. No clinical or epidemiological account of the Sydney epidemic has yet been published.

Coxsackie viruses are easy to isolate from the throats and fæces of patients with the disease and from the fæces of normal carriers. They cause an excellent serological response in the patient, so that it is possible to decide whether a particular virus is responsible for a case of disease, provided the first specimen of serum is collected very early. However, antibodies to at least 15 and probably more strains of virus would have to be tested if "C" virus testing was added to the routine of virus testing in aseptic meningitis. The only strain which at present justifies its addition to the battery of viruses to be tested for in the identification of the cause of a case is Stanley's "Sydney encephalitis virus".

Port Augusta Meningitis.

The most recently isolated of the known virus causes of lymphocytic meningitis is that which we have isolated in Adelaide from a fatal case in an otherwise mild outbreak of meningo-encephalitis at Port Augusta. This virus comes into that group which includes the largest of the known viruses, the psittacosis group, and it is visible under the oil immersion objective of a good microscope. We know nothing of the long-term origin of the virus, which is similar in some ways to viruses of bird origin. Its transmission in the Port Augusta epidemic, and in the Millicent epidemic, which was probably due to the same virus, was apparently by direct contact case-to-case spread, with the main spread in the school and a secondary spread in families and in hospital. At Port Augusta 24 of the 29 patients were children aged under ten years. The disease was a meningo-encephalitis with a sudden onset of headache or vomiting, both symptoms being present in 80% or more of the cases at some stage. A stiff back was usual and a stiff neck common; 28% of patients showed definite drowsiness. The temperature was usually about 102° F., but might rise to 104° F. and usually fell by lysis three to four days after the onset. In 18 of 25 patients on whom lumbar puncture was performed there was an excess of cells between 50 and 450 per cubic millimetre, in most cases all lymphocytes, but in some of the higher counts up to 40% of cells were polymorphonuclear. In these specimens of fluid, all of which were taken within thirty-six hours of the onset, there was no abnormality of protein, chloride or sugar content. More than half of the patients had recovered in seven days and nearly all within a fortnight. Six months after the epidemic Dr. Lansell Bonnin and Dr. J. S. Covernton could not find any evidence of muscle weakness in 23 patients reexamined, but three had apparently shown a transient limp in convalescence and one had had some wasting of the right thigh. Some of the children (through their parents) complained of irritability and undue fatigue during the first three months after the illness (Covernton and Miles, 1953). These findings are interesting in view of the findings of severe myositis in experimental animals infected with this virus (Miles and Dane, 1953).

The epidemiology of the condition strongly suggests a direct contact spread, since no common cause except school or family contact could be found to account for the spread. The hospital series of cases gives an excellent illustration.

Patient A was admitted to hospital on July 4 with *otitis media* and developed meningitis in hospital on July 9. Four people who had contact with him in hospital developed the disease. One patient had been in hospital for six weeks with an unrelated complaint. The onset of his illness was on July 14. A sister in the hospital and another patient in the ward developed the disease on July 15. Patient E, the only one who died, was admitted to the same ward on July 11 with respiratory symptoms and was discharged again on July 14. The date of onset in this instance is not clear, but it was July 16 or 17. He died on August 6. His sisters developed the disease on July 20, 23 and 24.

The facts I have offered you, together with the other data we collected, strongly suggest a disease spread by personal contact with an incubation period ordinarily between five and ten days, possibly occasionally as long as fifteen days. The Millicent epidemic, in which the convalescent sera collected all contained antibodies to the Port Augusta virus, suggested even more clearly an incubation period of about one week.

Murray Valley Encephalitis.

The outbreaks of arthropod-borne encephalitis which have been reported in Australia have been characterized by a high proportion of severe cases, and very few of these would be likely to be diagnosed as aseptic meningitis.

Murray Valley encephalitis is a disease of birds transmitted by mosquitoes, which occasionally erupts in south-eastern Australia. All known cases in the south have occurred between January and May, the vast majority between February and April. At the right time of year this diagnosis should be considered, but the disease is unlikely to be a cause of mild meningo-encephalitis in the absence of severe cases. It can be satisfactorily diagnosed by serological tests, especially when both complement fixation and neutralization tests are used on paired sera. In our investigations so far we have found no evidence of infection with this virus since the early part of 1951.

Infectious Mononucleosis.

Infectious mononucleosis also can give rise to this syndrome, and patients with this disease not uncommonly are admitted to hospital with the diagnosis of poliomyelitis. The presence of enlarged glands and often a palpable spleen gives a strong suggestion of the true diagnosis, and of blood smear and possibly a Paul-Bunnell test will confirm it.

So far, with the exception of infectious mononucleosis, I have been discussing almost entirely proven virus infections, and in that last example a disease generally held to be caused by a virus. Two of the known causal agents have not so far been identified in Australia, namely, the virus of lymphocytic choriomeningitis, for which workers in several centres have been searching, and that of encephalomyocarditis, for which the search has only just begun. Two others have so far not been recorded outside Australia.

Leptospirosis.

I now wish to consider a group of organisms on which very valuable work has been carried on in Queensland for the last fifteen years or more—the leptospiræ.

Leptospiral disease in man varies from the very severe infection with *L. icterohæmorrhagica* (Weil's disease) to the mild symptoms of pretibial fever with *L. batavia*. In Australia a mild form of leptospirosis was described by Johnson and Brown in 1938, and the organism was given the name *L. pomona* by Derrick in 1942. Since that time several new types of leptospira have been isolated from human disease in Queensland. *L. pomona* has recently been shown to have a world-wide distribution and to be the cause of swineherd's disease, which was previously regarded as of virus origin.

So far no evidence of leptospirosis has been found in South Australia (Dr. J. E. McCartney, of the Institute of Medical and Veterinary Science is investigating this problem), but three types are the most likely to be present: *L. icterohæmorrhagica*, which would probably have caused typical cases of Weil's disease if present and would have been recognized, *L. canicola* and *L. pomona*. One or more types of leptospira have been found causing human disease in all the other States, and although the climate here is not very suited to these organisms, it seems unlikely that we shall prove to be completely free of them.

All leptospiroses are zoonoses, their natural host usually being a rodent. Broom regards them as essentially parasites and commensals of rodents. However, in some cases transmission to man is more usual through other hosts, such as pigs, cattle or horses in the case of *L. pomona*, or dogs in that of *L. canicola*. In all these hosts the

leptospiræ settle in foci of infection in the kidney, producing little disturbance of the host's general health, although some canicola-infected dogs eventually die in uræmia. Intermittently, active leptospiræ are passed in the urine. Human cases occur through direct or indirect contact with infected urine (Yager, 1953). Therefore, human cases will most commonly be in those liable to have contact with animal urine: sewer workers, primary producers, veterinarians, those who bathe in stagnant waterholes, and those who keep dogs. Most human cases are sporadic, but epidemics when they occur are usually explosive, occurring most commonly in a party all of whom have bathed in the same infected pool, although sometimes less acute epidemics may be associated with an epizootic. This disease is most likely in rural workers or in those who bathe in dams or waterholes, and is to be expected in bathers late in the year and in rural workers during the winter months, when wet conditions make the spread of the organism easier. It will be most surprising if it is not present in South Australia.

The clinical picture of leptospirosis is extremely varied (Woodward, Diaz Rivera, and Hightower, 1953), but all the three types I have mentioned are capable of giving the aseptic meningitis syndrome. Broom (1951) in England examined paired sera from 642 patients with aseptic meningitis which had not been diagnosed by virus investigations; 17 proved to have Weil's disease and eight canicola fever. Approximately 4% of the sera tested were from patients with leptospirosis. Beeson and Hankey (1952) found 11 of 86 cases of aseptic meningitis to be due to leptospirosis, and Smadel reported seven of 97 cases among military personnel in the United States to have the same cause. *L. pomona* and *L. canicola* are particularly associated with the syndrome.

Despite the polymorphonuclear leucocytosis in the peripheral blood in leptospirosis, the cerebro-spinal fluid in leptospiral meningitis usually shows a lymphocytic excess, although a variable percentage of polymorphonuclear cells may be present. Leptospiræ can be isolated from the blood or urine in the acute case and leptospiral agglutinins can be demonstrated in paired sera.

Summary.

Up to the present there are at least nine viruses known to cause the syndrome of acute aseptic meningitis and a wide variety of leptospiræ may also cause it.

Single specimens of serum are of little use for laboratory investigations, as so many normal people have viral or leptospiral antibodies. The taking of a specimen in the acute phase and of another in convalescence is essential if a definite diagnosis is to be made. Material for virus isolation must be taken as early as possible in the disease, and it must either be brought straight to the laboratory or be frozen at once.

In the laboratory, if we get satisfactory material, we can perhaps diagnose one-third to one-half of the cases, but satisfactory material is essential.

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OBSTETRIC EXPERIENCES IN THE PURARI DELTA, PAPUA.

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THE Purari delta is part of a large continuous delta stretching west to the border of Papua with Dutch New Guinea. It is approximately 180 miles west of Port Moresby. The area is flat and swampy; the people with few exceptions are backward and illiterate. The total population of this part of the delta is thought to be about 5000. The only means of transport is by river, the natives using dug-out canoes. Until 1949 there were no permanent establishments to provide medical care in the Purari delta, and medical patrols were infrequent.

The obstetric experiences to be discussed occurred during my period of service as a medical missionary with the London Missionary Society in a hospital I established at Kapuna in the Purari delta. The period reviewed extends from March, 1949, to June, 1953. My staff consisted of native orderlies and nurses in training and one or two trained sisters, European or Samoan. The total number of cases to be discussed is admittedly small; but it is thought that such conclusions as can be drawn from them are of some general interest.

Village Practice.

Contrary to native customs elsewhere, the mother remains in her house for her confinement. She does not seek a secluded spot away from the village. No village

woman acts as a midwife to a Purari woman in labour, although there may sometimes be other women present. There may be present also the *imunu a'a*—sorcerer or medicine man—whose main function is to maintain morale and with the use of various chants to drive away evil spirits. Occasionally he is said to rub spittle on his hands and then to massage the woman's abdomen with a downward stroke. To what extent the *imunu a'a* is still called upon to act in this way is difficult to say, but probably less so than in earlier times.

During labour the woman adopts a squatting position, grasping a rail above her head. "Bearing down" occurs much earlier than we would consider advisable. The baby is delivered onto the floor of the house, and the mother herself cuts the cord one or two inches from the umbilicus. The cord is cut with a shell, any shell with a smooth, sharp edge being used. The continued use of a shell is now mainly a matter of tradition. The cord is not tied. After delivery the mother resumes her usual household duties within twenty-four to forty-eight hours. There are apparently no native mixtures, herbs *et cetera*, taken with a view to preventing or treating complications, though some women claimed that they could make a preparation with abortifacient powers. Others claimed also that they could render themselves sterile by drinking certain plant preparations. Complications of labour are left to follow their natural course.

TABLE I.

Distribution of Birth Weights of 264 Papuan Babies.

Weight in Pounds.	Sex.			
	Male.	Female.	Unknown.	Total.
0 to 1	1	Nil	Nil	1
1 to 2	1	1	Nil	2
2 to 3	5	1	Nil	6
3 to 4	3	4	Nil	7
4 to 5	9	13	3	25
5 to 6	36	29	5	70
6 to 7	33	38	6	77
7 to 8	27	34	4	65
8 to 9	8	3	Nil	11
Totals	123	123	18	264
Mean weights ..	6·04 pounds	6·21 pounds	—	6·12 pounds

No Purari mother is proud of having twins; strong shame is the usual reaction. In the past the custom has been to destroy the healthier of the two twins, or at least to ensure its early death through lack of attention. This custom arose as a means of winning over the malign spirits thought to have been responsible for the twin delivery. In some cases the birth of twins has been viewed either as a punishment for, or as evidence of, adultery.

It has been said that women of the primitive races do not experience pain during labour. This is not true of Purari women. The husband who has brought his wife to hospital after labour has commenced reports that his wife has "pains in her stomach". The patient herself admits to having pain during both the first and the second stages of labour, and her behaviour throughout the confinement is ample witness to the presence of pain. Painless childbirth does not occur naturally among these women.

Material for Analysis.

There were 282 Purari mothers admitted to hospital, who were delivered of 295 babies. Of these, 24 mothers were admitted at some stage after an unattended confinement. Five women were confined in canoes *en route* to hospital. Three others came to hospital within twenty-four hours of delivery because they wished to have post-natal care for themselves and attention for their babies. The remaining 16 were admitted on account of the following complications: retained placenta, six cases; puerperal infections, four cases; post-partum *prolapsus uteri*, two cases; miscellaneous, four cases.

Sex and Birth Weight Distribution.

Unfortunately records for weight and sex of all the 295 babies are not available. Of 259 babies whose sex was recorded, there was an equal distribution with 129 males and 130 females.

Birth weight records are available for 264 babies (Table I). The mean birth weight for males was 6·04 pounds and for females 6·21 pounds. The combined sexes had a mean birth weight of 6·12 pounds. This figure may be compared with those determined by Salber and Bradshaw (1953) for South African babies, which are as shown in Table II.

TABLE II.

Race.	Number in Series.	Mean Birth Weight. (Pounds.)
European	1757	7·47
Coloured	931	6·85
Bantu	7611	6·77
Indian	1738	6·46

The main factors responsible for differences in the birth weights of European and other babies are thought by most authorities to be nutritional and economic.

Prematurity.

By international agreement, infants weighing 5·5 pounds or less at birth are classified as premature. If this standard is accepted, of the 264 babies whose birth weights are known, there were 82 who would be considered as premature. This gives an incidence of 31%. Salber and Bradshaw in their survey of South African babies found the incidence to vary with race, being highest in the Indian group. Their figures were as follows: European, 4·2%; coloured, 9·6%; Bantu, 11·5%; Indian, 18·3%. In practice I have considered only those infants weighing five pounds or less to be premature. There were 47 infants classified as premature on this basis, an incidence of 18%.

The remaining 35 babies, weighing between five pounds one ounce and five pounds eight ounces at birth, were not considered premature. As far as could be determined by fundal levels the mothers were at full term when labour commenced. These babies were of normal appearance with smooth skins; they did not show the wrinkled, feeble appearance of the typical premature baby. They cried lustily, providing delivery had been satisfactory. They were able to suck without difficulty and were put to the breast on the first day. They received none of the special attention that is ordinarily given a premature infant, being treated as normal full-term mature infants, and they progressed well.

Table III shows the neonatal death rates among the various weight groups. It is considered that these figures, admittedly small, constitute a further argument for accepting a birth weight of five pounds or less as the standard of prematurity for Papuan babies of this area. Even so, the incidence of prematurity—18%—is high when compared with the incidence among European babies.

Maternal factors predisposing to prematurity were observed in only two mothers. One mother suffered from chronic nephritis and one was admitted to hospital with pneumonia shortly before the onset of labour. Fifteen premature infants were twin babies. Malpresentation in single deliveries was associated with prematurity on two occasions. One patient with *granuloma venereum* gave birth to an infant weighing two pounds. Whether the

premature labour in this instance was related to the venereal infection is difficult to determine.

The Purari delta is a highly malarial district. I have found spleen rates in some villages to be well over 90%. However, the number of adults with a palpable spleen is considerably lower. I have no statistics concerning the spleen rate amongst pregnant women; neither can I indicate the number of women who came into labour after an attack of malaria. However, it is to be expected that malaria is one of the factors responsible for the high incidence of prematurity.

TABLE III.
Neonatal Deaths.

Birth Weight in Pounds.	Number of Live Births.	Died First Day.	Died First Week.	Died Second to Fourth Week.	Total Deaths.
0 to 2 ..	5	4	—	1	5
2+	3	2	—	1	3
3+	8	2	1	—	3
4+	26	—	2	1	3
5 to 5·5 ..	33	—	—	1	1
5·5+	177	1	—	2	3
Unknown ..	20	1	1	1	3
Totals	272	10	4	7	21

Stillbirths.

Of the 295 babies born, 23 or 8% were stillborn. The known ætiological factors are set out below. Three of these babies were delivered unaided in a village, the mother being admitted to hospital subsequently.

Malpresentations:
Breech, 7; persistent occipito-posterior, 1; transverse, 2.

Twins: 5.

Prematurity:
Known weight, 4 infants; unknown weight, 4 infants.

Uterine inertia: 3 cases.

Knots in cord: 1 case.

Unknown factors: 10 cases.

Twins.

There were 13 sets of twins, the incidence being one in 22. As the number of births in my series is relatively small, it is probable that the true incidence of twins is rather lower than this. However, Ross (1952) found the incidence amongst Africans of Southern Rhodesia to be one in 35 births, with a series of 100 twins in a total of 3464 births.

Details of these twin deliveries are given in the following summary:

Sex of twin babies:
Like, 7 cases; different, 5 cases; unknown, 1 case.

Birth weight:
2 to 3 pounds, 3 infants; 3 to 4 pounds, 3 infants; 4 to 5 pounds, 7 infants; 5 to 6 pounds, 7 infants; 6 to 7 pounds, 4 infants; unknown, 2 infants.

Stillborn: 5 infants.

Presentations:
Vertex and vertex, 8 cases; vertex and breech, 3 cases; vertex and transverse, 1 case;[1] transverse and transverse, 1 case.

Hydramnios: 1 case.

Uterine inertia: 3 cases.

Forceps delivery: 1 case.

Cæsarean section: 1 case.

Retained placenta: 1 case.

[1] In this case the transversely presenting infant spontaneously reverted to a vertex presentation after the commencement of labour.

Malpresentations.

There were 22 malpresentations in the series, as follows: breech, nine cases; transverse, three cases; posterior, 10 cases. These figures do not include those cases in which an abnormal presentation was detected ante-natally and corrected.

Maternal Mortality.

Nine mothers died during the post-partum period. Seven of these were admitted to hospital in a serious condition after an unattended village confinement. Among these were five mothers with a retained placenta and two with a puerperal infection. One mother suffered from acute dysentery, presumably bacillary. The remaining fatal case was that of the mother of transversely lying twins. She died after Cæsarean section.

Miscellaneous Maternal Complications.

Post-partum Uterine Prolapse.

Post-partum uterine prolapse was seen on four occasions. Two of these patients were unattended during their confinement at home. Both these mothers were severely anæmic. In one case the exposed prolapsed cervix could not be returned easily, and later became gangrenous and separated.

Toxæmia of Pregnancy.

There were no cases of toxæmia of pregnancy or eclampsia in this series.

One other Papuan mother from the Port Moresby district did develop preeclampsia in two successive pregnancies, losing her child at seven months on the second occasion. She is not included in the series, as she was not a Purari woman; but it is of interest to note that she was married to a half-caste European-Papuan and lived in a semi-European style; her diet was a mixture of native and European types of foods.

Retained Placenta.

There were 13 patients with retained placenta. Six were admitted to hospital after a village confinement, and of these five died. The seven who were confined in hospital recovered.

In all fatal cases the histories varied in duration from a few hours to seven days. One patient died within half an hour of admission to hospital. All patients were severely anæmic and showed evidence of infection, though sepsis appeared to be localized. Some, despite the time that had passed since delivery, were in better condition than one would have anticipated. I have seen one further patient, not included in this series, who seven days after the birth of her baby presented with a retained placenta and late generalized peritonitis.

Treatment consisted of fluid replacement (blood is difficult to obtain from native peoples), the exhibition of antibiotics, an anti-malarial course, and removal of the placenta. Credé's method of expression was successful in one case, the patient being admitted to hospital within twenty-four hours of delivery; death occurred on the ninth day from pulmonary embolism. Manual removal of the placenta was performed for three patients with considerable difficulty owing to the contraction of the cervix. Digital dilatation had to be carried out slowly before any attempt at removal of the placenta could be made. One of the three patients died from shock and two from spreading infection. I felt afterwards, and in the light of experience gained with a later patient, that these women might have lived had manual removal not been performed. These three patients were not *in extremis* when admitted to hospital, and I felt that the operation simply broke down the naturally established barriers to infection. The simplest alternative treatment would be to perform hysterectomy. This was suggested to two patients, but they would not allow the operation to be performed. Another method of management, and one which I believe is suitable for these patients, offering a better chance of survival than does manual removal, would be to aim to

restore blood loss and control the existing localized infection with antibiotics, allowing the placenta to slough away in the meantime.

All seven patients with a retained placenta who were delivered in hospital recovered. In two cases Credé's method of expressing the placenta was successful. In four cases manual removal was carried out within two hours of delivery. A diagnosis of *placenta accreta* was made in the seventh case. The history of this patient is as follows:

The patient was aged about thirty years and in her eighth pregnancy. Ante-natal examinations revealed no abnormality. On two previous occasions the placenta had been spontaneously expelled after a delay of up to twenty-four hours. Labour was rapid and normal to the end of the second stage, delivery occurring six hours after the commencement. The baby was a normal full-term male infant weighing six pounds 12 ounces. Two hours after the baby's birth, the placenta had not separated. The uterus was flaccid and there was very little external bleeding. Two attempts at removal by Credé's method were unsuccessful. Under ether anæsthesia manual removal was attempted. The placenta stripped easily for the first inch or two, but beyond that point no plane of cleavage could be found. The condition was diagnosed as one of *placenta accreta*, and as hæmorrhage was increasing the attempt at removal was abandoned. Bleeding was controlled by fundal massage, pituitrin, ergometrine and the intravenous administration of 5% dextrose solution in normal saline. The patient refused hysterectomy; conservative treatment was therefore obligatory. Infection was controlled by the use of antibiotics, though a mild fever persisted for some weeks. Acute prolapse of the uterus occurred at the end of the first week while the patient was using a bed-pan; the uterus was replaced easily. The patient was discharged from hospital at the end of the eleventh week with a retroverted uterus almost normal in size. The placenta had sloughed away during this lengthy period in hospital.

The treatment of *placenta accreta* by conservative methods has been advocated by some authors in recent years. McKeogh and D'Errico (1951) have presented a series of 13 cases, nine of the patients being treated conservatively without any deaths. These authors made a special plea for conservative management, and considered that the only indication for hysterectomy was severe hæmorrhage that could not be controlled without operation. However, most authorities appear to prefer hysterectomy in cases of *placenta accreta* when the placenta cannot be manually removed.

I would suggest that there are two indications for the conservative management of patients with a retained placenta. They are: (i) Cases diagnosed as *placenta accreta* in which hæmorrhage is not severe and is easily controlled by routine measures. (ii) Any case of retained placenta in which there is a delay of more than twenty-four hours between delivery and the time of first examination by a medical practitioner. In these patients, if they are still alive, the hæmorrhage has generally stopped. The problem becomes one of blood replacement and the control of infection. The type of patient described in the second of these indications should never be seen in civilized communities. Such patients are, however, seen by practitioners working in primitive areas. The use of conservative measures involves a long stay in hospital and is costly in drugs, but the patient's life may be saved. Possibly a well-timed curettage of the uterus may reduce the time spent by the patient in hospital.

Summary.

Some obstetric experiences gained during a period of practice among Papuans of the Purari delta are described.

The mean birth weight of 264 babies was 6·12 pounds.

Only infants weighing five pounds or less at birth were considered to be premature. The incidence of prematurity as so determined was 18%.

The neonatal loss was 7·7% of live births; 8% of infants were still-born.

The incidence of twins was one in every 22 births.

Some maternal complications encountered are discussed, with special reference to the problem of the placenta retained for a long period.

Acknowledgements.

I should like to express my appreciation to Dr. H. A. McCredie, of Sydney, for his interest and helpful criticism during the preparation of this report.

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THE "BLIND AND PAINFUL" EYE.

By John L. Bignell,
Melbourne.

The removal of an eye is both a physically deforming procedure and one which frequently causes considerable psychological disturbance in the patient. The insertion of a satisfactory implant into the tissues at the time of operation may lessen these, and the ordinary artificial eye enables most patients to carry on their normal living.

In contradistinction to the removal of an eye, loss of vision in one eye is to be regretted, especially if it is of sudden or rapid occurrence; but as long as the eye is retained, psychological disturbance is much diminished or minimal. Slow loss of vision in one eye causes inconvenience only, by loss of binocularity and loss of side vision. In fact, many people have failed to notice total blindness in one eye until routine testing of vision has revealed it to them; or the patient, having accidentally covered the seeing eye, realizes that the other eye is blind. That is to say, there is a very great difference to the patient whether he loses his vision in one eye only or whether the eye itself is removed.

The purpose of this paper is to place an emphasis on certain procedures which may result in many fewer eyes being removed, especially in the light of the numerous therapeutic and operative procedures which the last decade has brought forth.

The removal of the blind eye, or partially blind eye, is undertaken for the following reasons: (i) the eye is very painful; (ii) the eye is dangerous or potentially dangerous to the other eye; (iii) a malignant neoplasm is present or even suspected; (iv) the eye is cosmetically unsatisfactory.

The Blind and Painful Eye.

The designation the blind and painful eye has in itself been taken as sufficient indication for removal of the eye. The patient carries on as long as endurance will last; the surgeon waits before excising the eye to end the suffering until this is requested by the patient.

The greater number of these eyes are blind from old injury, detachment of the retina or glaucoma which has reached the final stage despite standard therapeutic measures.

If there is no reason to suspect the presence of a neoplasm, that is to say, the ætiology of the disease is known, two procedures may be adopted: a cyclodiathermy operation and injection of alcohol.

Cyclodiathermy Operation.

If the intraocular pressure is raised, with the usual accompaniment of severe pain and sometimes vomiting, a cyclodiathermy operation usually gives complete relief and leaves the eye unchanged in appearance. The principle is that the vessels to the ciliary processes, where the aqueous fluid is formed, are coagulated by a surface application of a diathermy current, with consequent diminution in the production of aqueous fluids, resulting in a lowering of the intraocular pressure with relief from pain.

CASE I.—A male, aged forty-seven years, ten years previously had had bilateral trephine operations performed for chronic glaucoma, the left eye being quite blind when he had first presented. For years he had been comfortable, but four weeks before presenting he had developed acute glaucoma in the blind eye with all its disabling manifestations. A reasonable suggestion would be that the eye, which was of no use visually, be removed. However, at operation under local anæsthesia the superior half of the ciliary body (that is, from the 9 o'clock to the 3 o'clock position) was treated with diathermy in two rows directly on to the sclera, and cycloanæmization diathermy beneath the medial rectus was also included. The relief from pain which took place immediately the local anæsthetic had been injected continued, and the only pain present in the immediate post-operative period was that associated with any eye operation, and usually slight in nature, lasting for a day or so. The intraocular pressure was within normal limits and has remained so. The eye has remained comfortable and normal in appearance but for a somewhat dilated pupil; that is, to all but the interested observer the eye appears normal.

Injection of Alcohol.

Another successful procedure, but more difficult in its application, is the injection of alcohol into the immediate retroocular tissues to diminish impulses in the nerve fibres which carry pain impulses from the globe. The outcome of this has been described as variable, with undesirable complications such as ptosis and ocular palsies, which usually do not remain for more than two months. However, if the alcohol is accurately placed, this procedure is capable of giving a most satisfactory result.

CASE II.—A female, aged forty-six years, had presented twenty-one months previously complaining of loss of vision in one eye. A thrombosis of the central retinal vein was present in this eye, the vision being mere perception of light. A severe degree of vascular hypertension was present, which, in the next few months, responded very well to general therapeutic measures.

When the patient was examined again five months later, an acute rise of intraocular pressure had ensued, such as occurs in a high proportion of eyes in which all the branches of the central retinal vein are thrombosed.

The eye was blind and extremely painful, and excision was considered. However, one millilitre of 2% "Novocain" solution was injected into the immediate retroocular space; and after one minute two millilitres of 80% alcohol were injected, the needle having been left in position. A burning sensation was experienced by the patient, less severe than her original spreading head pain. There was some pain on movement of the eye, lasting five to six days, and since then no pain has been felt. The pressure has remained high; but the cornea is bright and clear, the appearance good, and the patient pleased.

The Dangerous or Potentially Dangerous Eye.

The eye that is potentially dangerous to the other eye is usually one which has suffered a direct injury and which is inflamed, with consequent fears that sympathetic ophthalmitis may ensue causing blindness in both eyes. The removal of the injured eye has not been displaced from its prime position in treatment, although the making of an accurate and extensive surgical repair, and the advent of the use of cortisone in the treatment of the initially damaged eye at the correct stages to reduce the exudative phases of inflammation yet not impair healing, have very considerably diminished the number of eyes which come up for consideration for removal in this category.

The Eye Containing a Malignant Neoplasm.

A malignant neoplasm may be suspected to be the reason why an eye is blind and, in the later stages, painful.

If a malignant condition cannot reasonably be excluded clinically, it has been customary to remove the eye. On pathological examination, however, only a proportion of such eyes contain the suspected growth. Yet it is important to the patient that an eye under any suspicion is not left without further investigation, or until definite evidence is forthcoming.

By extending the field of investigations many eyes may be saved. For example, if the intraocular pressure is raised and the cornea cloudy, preventing adequate examination of the interior of the eye, it is reasonable to perform a decompression operation as a method of investigation. Such an operation was performed in these next two comparable cases, the eye of one patient being removed later because of a growth, the eye of the other having been demonstrated to be a safe eye to be left in place.

CASE III.—A male, aged fifty-six years, gave a history of diminution of vision in his right eye, noticed accidentally several months prior to his presenting for examination.

The cornea was cloudy and the anterior chamber of average depth. The pupil was four millimetres in diameter and did not react to light directly or consensually. Visual acuity in the right eye was perception of hand movements with fair projection of light except superiorly. The intraocular pressure was raised to 56 millimetres of mercury (Schlötz).

No details could be seen further inside the eye owing to the hazy cornea, a condition not improved by dropping glycerine on to the anæsthetized cornea.

Because of the element of doubt which existed as to the nature of the glaucoma, an iris inclusion operation was performed.

Three days later the cornea was clear and the details inside the eye were visible. Within the eye was a dark mass, which did not transilluminate well. The general transillumination did not equal that in the patient's other eye, and there was nothing in the lens or anterior segment of the eye to explain this feature. The presence of a neoplasm was now clinically diagnosed and the eye was excised.

Pathological examination of the eye revealed the presence of a malignant melanoma of the choroid at the posterior pole of the eye.

CASE IV.—A man, aged fifty-four years, presented with similar clinical features to those in Case III, and excision was considered on the grounds that a malignant neoplasm could be present.

A decompression operation, however, revealed that the *fundus oculi* was normal except for deep cupping of the disk, and the condition was in fact, a late stage of chronic glaucoma. The eye is still *in situ*, an excision having been avoided.

Other procedures which are of great use to further the diagnosis are as follows: (*a*) Aquipuncture (Amsler, 1949) with an examination of the cells obtained. (*b*) Exploratory puncture of a doubtful mass in the eye, with examination of the cells obtained (Travers, 1952). (*c*) Examination of the eye with the eye endoscope (Butterworth and Bignell, 1952), which is inserted through the sclera and views the interior of the eye directly; this has been used with the revealing of otherwise invisible intraocular details.

The Cosmetically Unsatisfactory Eye.

An eye which is unsatisfactory cosmetically may be subjected to reparative operations or be hidden beneath a contact glass painted to give the outward appearance of an eye. If removal is the only method practicable, and is desired greatly by the patient, removal of the eye and insertion of a non-buried or buried implant may give a very pleasing appearance. The artificial eyemaker's art is not without considerable importance in the attainment of a satisfactory result.

Summary.

Procedures may be adopted which will enable many eyes to be retained, when excision has been considered the only method which will afford relief from symptoms or provide a safeguard for the patient's life.

These procedures range from major eye operations, designed to provide further exact information about the nature of the disease present in the eye, to other relatively minor procedures, the aim of all of which is the retention of the eye.

Emphasis is placed on the possibility and desirability of retaining a blind eye for both psychological and cosmetic reasons.

Acknowledgements.

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TREATMENT OF THE COMMON WART BY X-RAY THERAPY.

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X-RAY THERAPY is commonly recognized for *verruca vulgaris*, but many papers give the impression that this method of treatment is to be employed in special circumstances or when all else fails. A recent review in the *British Medical Journal* states of X-ray therapy, "if properly conducted, the treatment may be both successful and safe". A wide variety of treatments is advocated, but even in the best a considerable proportion of failures is to be expected. The pathology has been adequately described elsewhere. Patients are usually afflicted on the soles of the feet or heels or on the fingers or knees. Treatment is often demanded on account of pain and tenderness, which may interfere with normal gait, or the patient may have an urgent desire to be rid of the wart despite assurance that it is a harmless condition. The fact that such a patient may acquire increasing numbers of warts, or that he may infect a relative, makes this desire to be cured a very reasonable one. The tendency to spontaneous regression is well known to all practitioners, but this phenomenon is not nearly so common as the tendency for the wart to persist and annoy the patient for an appreciable period of time. The uncertainty of how long he may wait for a possible spontaneous cure generally leads to his demand for more definite action. Although the pathological condition is trivial, the impression is gained that it is not trivial to the patient and he expects to be relieved. It would appear, therefore, that it is justifiable to treat warts seriously and as a worthwhile avenue of medical practice. However, it is desirable, in treating such a simple condition, that the patient should have the minimum of complicated procedure, of pain, of loss of time, of danger from sequelæ, and also of expense. The various time-honoured methods should be measured against these standards, it being remembered that a recurrence with more disability and the necessity for more treatment and expense is a serious disadvantage. Surgical methods involve discomfort and disablement both immediate and during the period of healing, and recurrence is not uncommon. Chemical means involve much loss of time and inconvenience if applied by the patient, with a likelihood of failure; or if they are applied by the chiropodist, from whom much greater efficiency might be expected, there is a considerable expenditure of time of both patient and chiropodist and not inconsiderable expense. Many chiropodists are unwilling to undertake treatment because of the uncertainty of the chemical method. It will be shown that the method of irradiation overcomes these disadvantages. In that the whole of the wart and its ramifications are subjected homogeneously to the therapeutic agent, X-ray therapy is a logical method. The danger and culpability of producing radio-necrosis in the treatment of a non-malignant condition have been well recognized in the literature, and unfortunately one can often find a case to illustrate this danger. However, it would appear that it is possible to reduce the chance of this happening to negligible and unimportant proportions. It would also appear that it is possible to obtain a high degree of effectiveness.

The Present Series of Cases.

The interest of the writer in this condition began fortuitously, but has steadily grown. Odd cases form part of any radiotherapeutic practice, and they generally command a minimum of attention and interest in the face of the more serious task of treatment of malignant disease. It soon became obvious that a routine treatment was not sufficient and that there was an interesting variety of clinical responses in the management of the condition, to be observed and investigated.

A series of 140 cases of *verruca vulgaris* is reported. The majority have been plantar; about 10% have occurred on the hands or elsewhere. One hundred and twenty patients have been treated by the writer in the last two years; the other 20 patients have been treated by others in close association with the writer. In only one case of the whole series was it not possible to cure the condition, surgical excision being advised for a recurrent plantar wart. In 127 cases the standard routine course of treatment resulted in cure. There remain 12 cases in which the routine treatment was varied and cure was obtained; and it is certain that these (9%) would have been "failures" if treated by routine measures. They illustrate the main object of this paper—to emphasize the importance of follow-up until cure is obtained. Though this policy may occasionally make for protracted treatment, it must be accepted, because inevitably the patient, if abandoned, will turn elsewhere for a whole new *régime* of treatment. Some problems of diagnosis and treatment are to be discussed.

Diagnosis.

In the matter of diagnosis, it is surprising how often a hard corn, *kaloma durum*, resulting from pressure, or even a callus, resulting from friction, has been referred for treatment as a wart. On the feet, it is necessary to take a scalpel in most cases and to pare away the overlying callus. The wart becomes softer, and a pattern of black, hard dots is seen, or the pink or red projections are cut across and bleeding occurs. A magnifying glass is essential in diagnosis. In the case of a corn, the clear, hard, horny core becomes obvious. Very little benefit will result from a course of radiotherapy. The writer had a personal experience of this, and enough examples have been seen to establish the fact. A corn is cured only by careful chiropody and improvement of foot posture. Small doses of X-ray therapy may occasionally act as an adjuvant in retarding epithelial growth. The appearance of the plantar wart may be considerably modified by previous treatment. The use of coagulants, or even the wearing of adhesive plaster, resulting in a white, necrotic mass, presents the problem whether the wart is still active. In most cases the wart will continue to grow if treatment is not proceeded with. Sometimes previous treatment, infection or trauma results in an intensively tender reddened cellulitis. The scalpel can be used only sparingly, and positive evidence of the condition of the wart is difficult to obtain. It is necessary for the inflammation to subside before a course of radiotherapy is applied. To achieve this, minute doses of X rays as used in the treatment of furuncle are very useful.

The appearance of an active wart recurrence in the scar of a recent excision is often atypical. The linear scar is usually thickened and tender and an underlying nodule may be palpated. In one case, a recurrence in the pulp of the finger formed a discrete, oval lump about four millimetres in diameter, lying in the subcutaneous tissue but attached to the dermis. The diagnosis must be presumed in some such cases, as typical wart tissue cannot be demonstrated in the surgery. The presence of overlying callus has been mentioned; but at times it may be excessive and very hard, and wart tissue may be demonstrable only in one spot. Again, there may be demonstrable with the scalpel diffuse dark points of the warty papillary processes without actual localization into a discrete wart.

Finally, it is important to recognize and consider treatment for tiny new warts appearing just before or during the course of treatment, as minute, clear vesicles deep to the keratinous superficial layer of the skin. They may be slightly tender, but are readily seen with the magnifying glass whilst the main lesion is being inspected. These

have often been seen to abort after a few weeks' observation, leaving a little pit. On the other hand, one can progress to a fully developed plantar wart, which detracts from the satisfaction derived from having cured the main original wart.

In other positions the *verruca vulgaris* only projects from the surface, and on the extremities a solitary lesion may grow quite large, with a hard, horny cap surmounting an indurated base. It is therefore sometimes difficult to distinguish it from epithelioma of the skin, particularly in Australia, where carcinoma of the skin is very common and has a variety of typical forms. Once again the removal of the horny cap with the scalpel soon shows the difference, the regular pattern of dark or bleeding points being found in the case of verruca.

On the hands the *verruca plana* must be distinguished, as it does not respond with any certainty to X rays.

In all positions the *verruca vulgaris* may present in its mosaic form; but when this is infected or partially treated by caustics, careful observation is required.

Indications for Treatment.

To a radiotherapeutic practice many patients are referred because of the failure of other methods; but an increasing proportion now come for X-ray treatment as the initial form of therapy, and there is an opportunity for discrimination in the application of treatment. For the reasons set out in the preamble, a solitary wart is treated whatever its site, except in children, in whom epiphyseal bone growth may be affected. In such a case other methods are advocated. This also applies to the treatment of multiple warts in children, as these are the most likely to disappear spontaneously. In a child, however, one or two larger warts may predate the others, and the successful treatment of these may result in spontaneous resolution of the others. Around the nail of a child the wart warrants more serious attention, and X-ray therapy can be applied with safety by further fractionation of the dose. This principle can be applied to the treatment of an area of mosaic warts, it being thought that the larger area involved increases the risks of radiation damage. The writer has also treated successfully, by extending the period of fractionation, warts on the back of the fingers and warts which have recurred after previous X-ray treatment, although it is known that the use of large destructive doses of X rays would almost certainly cause necrosis under these circumstances.

The problem frequently arises in relation to the foot, when in addition to one or two painful warts on the heel or forefoot several other smaller plantar warts are discovered, whether to treat only the main ones or to undertake immediately the laborious and time-consuming task of systematically treating them all. Experience suggests that one should begin with the former method, meanwhile encouraging the use of glacial acetic acid by the patient on the minor warts after they have been pared down. By the end of the course they may have been shed, tiny pits being left, or they may be so dry as to be obviously dead. In less than half the cases the decision was made to apply some X-ray therapy to the minor warts, usually smaller or few doses.

As an adjuvant method, the soaking of the warts, particularly a mosaic wart, in a 5% formalin solution has been found useful in restricting the amount of radiotherapeutic treatment.

Technique.

Of the series of 140 patients, 125 followed the routine course of treatment with a satisfactory result. At the first examination excess keratin was removed and the diameter of the wart tissue was ascertained. A lead shield with a hole one or two millimetres wider than the wart was strapped over the wart, and a dose of X-ray therapy was applied, the factors used being 100 kilovolts, no filter, and a distance of 16 centimetres. The dose was repeated a week and a fortnight later, and amounted to 900*r*; thus 2700*r* surface dose was given in a period of fourteen days. As the areas were small, no allowance was made for backscatter. As a result, the pain of the wart usually subsided within three or four days, after which the patient continued to be comfortable. In a minority of cases the patient complained of returning discomfort after two or three weeks, and it was then found that the surface epithelium, including the wart, which was desiccated, had become separated from the underlying tissue by a collection of seropus under some pressure. When this was cut off the undersurface was found to be epithelialized and it rapidly dried and hardened up. Usually the patient reported back four weeks after the radiotherapy, as instructed, without complaints, and it was found that in the case of the hands or the legs the warts had fallen off. None of the usual signs of X-ray reaction, erythema, discharge or desquamation, was found to occur. Plantar warts were usually still in position, but were soon found to be highly keratinized. After some dissection with the scalpel, a plane of cleavage would suddenly become apparent, the wart peeling off from a reddened epithelial surface. In about 25% of cases the scalpel continued to remove pearly keratin containing black points until a perfectly smooth, clear surface resulted. These patients tended subsequently to grow new callus, as the site was usually a pressure point. At a subsequent visit this callus was removed and the patient was advised in regard to footwear and foot exercises.

In nine cases, when the keratinized wart was curetted, the deeper tissue became softer and moister until a tiny soft granulomatous spot was revealed at the apex of the crater and bled readily if cut. It was thought that this was unsatisfactory, after a follow-up of two patients had proved that the condition tended to persist, so it was decided to give another similar dose of X rays to the smaller area at the bottom of the crater. As a result of this practice it was found that although new callus had reformed in the crater from which the dead wart had been curetted, the keratinous tissue now peeled out cleanly, and the patient usually reported that he felt much more comfortable. In the treatment of the one patient referred for surgical excision this procedure was not followed; recurrence was allowed to take place after the course of three doses, and he was subsequently treated by another standard course, again unsuccessfully.

Principles of Treatment.

The principles of treatment are therefore as follows: (i) adequate preparation by removal of thick horn; (ii) an adequate dose; (iii) fractionation of dosage over two weeks; (iv) careful follow-up and additional X-ray treatment if necessary; (v) removal of all traces of the dead wart.

Preparation.

A review of cases in which additional dosage or repeated follow-up inspections were necessary suggested that low dosage could result at the base of the wart because of the absorptive effect of half a centimetre or more of warty and keratinized tissue, and this could cause an unsatisfactory response.

Dose.

The individual dose was originally set in an arbitrary way at 600*r*, but was soon increased to 900*r*, because the typical response as described above was not sufficiently often encountered. There is no doubt that warts vary greatly in sensitivity. One patient, by chance, had only the one initial dose of 900*r* and yet the wart was shed three weeks later. One has experience of tiny satellite warts treated by one or two doses of 1000*r* on a very small field, with complete success. On the other hand, just as many minor warts have failed to clear up, when for some reason a dose short of the standard dose has been given. After an alteration had been made to the superficial therapy machine, the technique was changed to the administration of three doses of 750*r* for a short period; this was immediately reflected by a crop of problems in the follow-up period, which had hitherto been "routine" and satisfactory. It was therefore thought that three doses of 900*r*, while being apparently safe, was an adequate dosage level. It has been stated that recurrent warts could be

treated with safety. Nevertheless, small areas only were treated, with the understanding that if necrosis did result the area could be as readily excised at that date as at the time of treatment, the only alternative to further radiotherapy being surgical excision. In addition, the dose was further fractionated to five doses at weekly intervals, and sometimes if response seemed satisfactory the last dose was omitted. The total dose was adjusted according to the rules of rate of tissue recovery well known in the fractionation of the dose in the treatment of epithelial cancer.

Fractionation.—As it is desirable to avoid unpleasant sequelæ in treatment of benign warts, it seemed reasonable to apply the lessons learnt in the treatment of epithelioma and about the rate of recovery of normal skin. Hence the dose was spread over a period rather than being given as a single massive dose. The reviewer in the *British Medical Journal* refers to a "destructive dose of X-rays", and this is apparently a common notion. Thomsen and Rauschkolb treated a series of 117 patients on this principle and obtained cures in 92%. The doses were cancericidal, and considerable reaction resulted. Several similar reports are available in the literature. Nevertheless, radiotherapy is essentially a method which takes advantage of the relative sensitivity of pathological and normal tissues. It appeared that the sensitivity of the wart was greatly enhanced by fractionation. It responded in the majority of cases by differentiating into a mass of keratin at a dose which failed to cause much disturbance of the neighbouring tissue. It must be stressed that adequate dosage must be related to fractionation, to ensure success.

Follow-up.

The careful follow-up recognizes the varying sensitivity and response in different cases, and instead of obtaining an average response to an average treatment it is possible to control the condition in every patient without a proportion going on to be treated again by some other practitioner.

Complete Removal.

Sometimes it is an exacting task to pare away every tiny black speck representing a coagulated papillary process; yet this should be the aim, where it is necessary. It is very clearly understood that the X rays in the dosage used do not destroy virus particles. Although the cells of the wart are necrotic the virus may remain viable, and it is the belief of the writer that recurrence may take place if the treated corn is not removed.

Other Methods.

Various adjuvant methods have already been mentioned. *Notice must be taken of predisposing factors.* Hyperhidrosis is sometimes present and needs some controlling treatment. The patient is advised against allowing the formation of thickened callus. In some cases numerous pits in the sole of the foot indicate the presence of *incipient satellite warts, and the regular application of* methylated spirit has controlled this. In two cases, one of which was a plane wart, in spite of a fourth dose of X rays *and careful observation, the site of the wart* remained slightly tender and abnormal in appearance. The area was treated with diathermy and rapidly healed. Once again, control was easy because recurrence had not actually taken place.

Conclusion.

A wider use of X-ray therapy in the treatment of the common wart is advocated. *It is shown that a high rate* of cure is obtained when radiotherapeutic principles are applied and when each patient is carefully followed up. Experience of the method has included no unpleasant sequelæ.

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Reports of Cases.

SURGICAL EXPOSURE FOR RUPTURED KIDNEY.

By ROBERT S. LAWSON,
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WHEN nephrectomy is contemplated for urgent bleeding from a ruptured kidney, the orthodox loin incision will usually be chosen with the patient lying on his side. A recent experience prompts me to suggest that in these circumstances it is better to perform the operation with the patient in the dorsal position, and use a transverse incision.

Clinical Record.

On May 29, 1953, at 5 p.m., I examined a child, aged ten years, at his home, at the request of Dr. Bernard Herman. He had been "kneed" in the belly at a football game about two hours earlier. He was pale and shocked with a pulse rate of 96 per minute. The abdomen was tender, and muscle-guarding was present on the left side. He was then induced to pass urine—a few ounces—which looked like pure blood. It was plain that his condition was one of great urgency and he was moved to hospital forthwith. His pulse rate was 128 per minute on his arrival, and a blood transfusion was started. He was almost pulseless when the operation began at 6.30 p.m.

As I considered that his spleen might have been damaged as well as his left kidney, a left-sided transverse abdominal incision was made a little above the level of the umbilicus, the patient lying on his back, but with a sandbag under the left buttock. The peritoneal cavity was opened, but there was no free blood in it and the spleen was intact. However, the peritoneal cavity being opened, the opportunity was taken of passing a hand across to feel the right kidney, which was present and apparently normal.

There was a mass of blood clot enveloping the left kidney, which was then exposed by rapid retroperitoneal dissection without enlarging the incision. The kidney thus brought *to view proved to be in two pieces, having been completely* ruptured across its middle into the pedicle. The crushed upper half of the kidney was delivered, secured and removed, then the entirely separate lower half of the kidney attached to the ureter. Blood clot was scooped out, the peritoneum was closed in front and the muscle layers were thereafter closed in routine fashion with a drainage tube inserted posteriorly.

Convalescence was uneventful, and the boy was back at school in about a month.

Comment.

This experience illustrates a difficulty which is nowadays not very rare—namely, the decision as to whether an intra-abdominal hæmorrhage following injury is from the left *kidney alone or from the spleen as well. When such doubt* exists, a transverse incision as described permits a rapid opening of the peritoneal cavity to determine the presence of any intraperitoneal hæmorrhage. *It also allows one to* confirm that the second kidney is actually present, by feeling it across the peritoneal cavity. Then, if removal of the left kidney is indicated on account of severe damage, as in the present case, it is comforting to know that there *are, in fact, two kidneys. This would appear to make the* procedure worth while, even if it seems certain that the bleeding is from the kidney alone. The nephrectomy itself by this approach presents no more difficulty than with the orthodox loin exposure.

Such cases can be so urgent that decisions of this sort are best made in advance. I would therefore suggest that nephrectomy for rupture of the kidney should be undertaken in the manner described, whether other abdominal injuries are suspected or not.

Reviews.

Manual of Psychological Medicine: For Practitioners and Students. By A. F. Tredgold, M.D., F.R.C.P., F.R.S.E., and R. F. Tredgold, M.A., M.D., D.P.M.: Third Edition; 1953. London: Baillière, Tindall and Cox. 9" x 6", pp. 340. Price: 25s.

THE revision for the third edition of the late A. F. Tredgold's "Manual of Psychological Medicine" was completed by his son, Dr. R. F. Tredgold. The work contains a sound presentation of current psychiatric theory and practice. Since the book is intended for practitioners as well as for students, perhaps more guidance might have been offered to those who have not had the advantage of training in psychiatric out-patient departments and hospitals. More might have been included about the psychiatry of childhood and adolescence. The authors have made out a good case for the recognition of acute or secondary neurasthenia, while reminding the reader that anxiety and depressive states must be dismissed before arriving at this diagnosis. Sound practical sense has prompted the inclusion of a chapter on neuroses of mixed types. In these days when the term psychosomatic medicine is so much used and abused, fuller and more detailed reference to mind-body relationships would enhance the value of the book for general practitioners. Amongst the newer drugs in the treatment of epilepsy only "Dilantin" and "Tridione" are mentioned—the work went to the publishers in September, 1952. The authors refer to simple senile dementia as primary. Older psychiatrist will recall the application of the term primary dementia to *dementia præcox*. In the sections on physical treatment the authors, we think wisely, have refrained from discussing details of technique which can be learned best in hospitals. The indications for and against treatment of this kind are fairly set out. It would not seem out of place to refer to the modifications of standard leucotomy which are less drastic in their effects and are of value in chronic psychoneuroses. The chapters on examination of the patient and on psychotherapy could well be expanded to include more practical suggestions concerning the psychiatric approach and various ways of handling psychiatric, emotional and personal problems in general practice. The book amply meets the needs of examination candidates and is eminently readable.

Textbook of Physiology and Biochemistry. By George H. Bell, B.Sc., M.D. (Glasg.), F.R.F.P.S.G., F.R.S.E., J. Norman Davidson, M.D., D.Sc. (Edin.), F.R.F.P.S.G., F.R.I.C., F.R.S.E., and Harold Scarborough, M.B., Ph.D. (Edin.), F.R.C.P.E., with a foreword by Robert C. Garry, M.B., D.Sc. (Glasg.), F.R.F.P.S.G., F.R.S.E.; Second Edition; 1953. Edinburgh and London: E. and S. Livingstone, Limited. 10¼" x 6½", pp. 1014, with many illustrations. Price: 50s.

A SECOND EDITION of the "Textbook of Physiology and Biochemistry" by Bell, Davidson and Scarborough has been produced to keep the book abreast of the modern developments in these rapidly growing sciences. The general arrangement of the book has not been altered, but like most new editions of a text-book of physiology, the size has increased slightly, by about 80 pages. As in the first edition, the book is clearly written, the type is pleasing and the diagrams are numerous and excellent. It is intended primarily as an introduction to biochemistry and physiology for the student of medicine, veterinary medicine, dentistry and pure science, and for this purpose it can be well recommended.

In the introductory chapter the authors point out that if research in medicine and surgery is to prosper its exponents must have a considerable knowledge of the basic sciences. This book will not give the graduate a detailed account of any aspect of biochemistry and physiology, but it should serve as a useful guide in indicating the trends that these sciences are taking and the way in which the advances in the laboratory may be applied to man. The graduate who is interested in one particular topic will probably have to follow up the references which are given at the end of each chapter, for on some subjects a brief outline only is given. The lymphatic system, for example, is disposed of in a few lines, while very little is said about the distribution of the body electrolytes, a subject which has become of considerable interest to the clinician, especially the surgeon. It is, however, easy for the critic to suggest what should be inserted, but extremely difficult for the authors to satisfy all their readers and keep the book within the limits of an introductory study. On the whole this is an excellent production from which the practising clinician could, with the minimum of effort, keep up to date with the broad advances of physiology.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Modern Medical Monographs: Acute Pulmonary Edema", by Mark D. Altschule, M.D.; 1954. New York: Grune and Stratton. 9" x 5½", pp. 78. Price: $3.50.

The purpose of this book, written for students of medicine at school or in practice, is to relate the manifestations and the treatment of acute pulmonary œdema to what is known about certain physiological phenomena.

"Practical Procedures in Clinical Medicine: Biochemical and Radiological Investigations", by R. I. S. Bayliss, M.A., M.D. (Cantab.), M.R.C.P.; Second Edition; 1954. London: J. and A. Churchill, Limited. 8½" x 5½", pp. 500, with 61 illustrations. Price: 32s.

Written primarily for senior students, house physicians, registrars and general practitioners.

"A CIBA Foundation Symposium: The Chemical Structure of Proteins", edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Margaret P. Cameron, M.A., A.B.L.S.; 1953. London: J. and A. Churchill, Limited. 8" x 5½", pp. 234, with 49 illustrations. Price: 25s.

The report of a symposium held in December, 1954—the seventh of the Ciba Symposia to be published.

"Edinburgh Post-Graduate Lectures in Medicine", Volume VI; 1953. Edinburgh: Published for the Honyman Gillespie Trust by Oliver and Boyd. London: Macmillan and Company, Limited. 10" x 6½", pp. 520, with 176 illustrations. Price: 21s.

These lectures have appeared individually in the *Edinburgh Medical Journal*.

"A Synopsis of Children's Diseases", by John Rendle-Short, M.A., M.B. (Cantab.), M.R.C.P., D.C.H.; 1954. Bristol: John Wright and Sons, Limited. London: Simpkin Marshall, Limited. 7½" x 5", pp. 620, with seven text figures. Price: 32s. 6d.

The author has tried "to assemble all the facts tidily for easy reference and rapid revision".

"The Mothercraft Manual: Or the Expectant and Nursing Mother and Baby's First Two Years", by Mabel Liddiard, C.B.E., S.R.N., S.C.M., M.T.S., with an introduction by Dorothy M. Taylor, M.D., D.P.H.; Twelfth Edition; 1954. London: J. and A. Churchill, Limited. 7½" x 5", pp. 188, with eight plates and 30 text figures. Price: 5s.

This book has been translated and published in Siamese, Chinese and Afrikaans.

"Administrative Medicine: Transactions of the First Conference, March 9, 10 and 11, 1953, New York", edited by George S. Stevenson, M.D.; 1953. New York: Josiah Macy Junior Foundation. 9½" x 6½", pp. 180, with six text figures. Price: $3.00.

An "almost verbatim" transcript of informal discussions by a group of scientists working in fields connected with administrative medicine.

"Connective Tissues: Transactions of the Fourth Conference, February 18, 19 and 20, 1953, Princeton, N.J.", edited by Charles Ragan, M.D.; 1953. New York: Josiah Macy Junior Foundation. 9" x 6½", pp. 198, with 61 illustrations, one in colour. Price: $3.75.

Thirteen persons took part in the conference. The two main subjects discussed were mammalian striated myofibrils and the effect of vitamin *A* on organ cultures of skeletal and other tissues.

"Dermatologic Medications", by Marguerite Rush Lerner, M.D., and Aaron Bunsen Lerner, M.D., Ph.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 7½" x 5", pp. 184. Price: $3.50.

Intended as "a handy reference for simple and effective treatment".

The Medical Journal of Australia

SATURDAY, MAY 1, 1954.

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References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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MECHANICAL AIDS TO SCHOLARSHIP.

IT has been seriously suggested that each new successful author gains his place in the world of letters by displacing an older writer. The idea is that there is a physical and possibly psychical limit to what one can read and assimilate, and if a new writer arises who captures the imagination of his contemporaries, then of necessity there must be a compensating neglect of earlier efforts. The new author, by virtue of the freshness of his style and presentation, gains the enthusiastic admiration of his readers if he looms large enough in their critical estimation. The publications of Scott, Macaulay, Dickens and Tennyson were pounced upon by readers in English-speaking countries, who were inclined to forget that there were antecedent masterpieces quite as worthy of notice. The historian and the student of literature must perforce read widely in the publications of past centuries; on the other hand the man of science is mainly concerned with what appears in the most recent technical periodicals of his own time. It is gratifying to observe that in scientific circles the cultural importance of the history of science is now being given worthier recognition, so that a study of the works of Galileo, Newton, Lavoisier, Faraday and Helmholtz is prescribed in many curricula for science degrees or diplomas. In medicine, however, the laborious perusal of pre-Pasteur medical literature may be described without offence as a pure waste of time. The "Anatomy of Melancholy" by Samuel Butler gives a vivid picture of the enormous reading which a learned doctor of medicine was obliged to traverse in the seventeenth century. Not only had he to be familiar with Aristotle and Galen, but with a host of mediæval and Renaissance writers. Today these are scrutinized by only a few enthusiasts in medical history. Whether the historian or literary scholar reads mostly in the past or the man of science or medicine reads almost exclusively in the present, the fact remains that the ground to be covered is continually increasing in extent and the burden of reading is becoming more and more exacting. Is there a limit to this capacity to read and learn? Of course there is, but this constantly expanding demand on the scholar is offset by certain considerations. One is the increased specialization of periodical literature; another is the ceaseless improvements in library organization. In Gibbon's day there were no municipal libraries; the two Universities of Oxford and Cambridge possessed collections of books, but by no means up to the standard required today. Certain noblemen possessed private libraries, and the scholar had to go hat in hand to his lordship for permission to enter and consult. Gibbon, being a man of some means, was able to buy most of the books he wanted in the writing of his great history, but that was a piece of good fortune which rarely fell to the scholar.

When we consider the achievement of the modern man of learning we cannot fail to realize that his scholarship is enormously in advance of that of his predecessors. Gibbon has been mentioned; he has been praised and deservedly so for the extent and catholicity of his reading, but great as this was, it was small in comparison with that of his modern editor Bury. Johnson was an omnivorous reader, as his dictionary indicates, but a modern lexicographer would go far further in his examination of philological material. The Shakespeare scholar of today displays an erudition incomparably greater than that of Johnson, Steevens, Theobald and Malone. The Continental countries manifest the same tendency, whilst in the United States the remarkable evolution of libraries has greatly reduced the scholar's task. Libraries, specialization of periodicals, the publication of abstracts and epitomes account for much, but there are two considerations often overlooked which play a big part in easing the labours of the expert in keeping up to date; one is the immense advances made in internal illumination and the other the improvement of vision by spectacles. The main illuminant in house, hall, theatre, concert room and library until well into the nineteenth century was the candle. The French chemist Chevreul separated out the glycerin and olein present in commercial fat and gave the world the candle of stearic and palmitic acids, familiar to Australians. Paraffin wax came later into use in countries with lower summer temperature. In the time of Johnson, Gibbon and Porson the tallow candle was not used by the privileged classes largely because the contained glycerin produced the offensive vapour of acrolein. The usual candle was beeswax, but spermaceti appeared about the middle of the eighteenth century. Whether made of wax or spermaceti, the candle gave a poor light compared with what we use and expect today and moreover required constant attention in snuffing the wick, as the pickling and plaiting which produce the self-consuming wick of the present time were unknown. Small wonder that scholars and writers "burned the sun", that is, got up early in summer to pursue their labours. One of the greatest benefactions which science has brought to our modern life is the bulb electric light. Gas was acclaimed as a great advance on the candle, but gas poisoned the air with carbon monoxide even when combustion was unimpeded. The atmosphere breathed in churches, concert halls and theatres after a spell of gas lighting produced a flushing of face, a throbbing of temples, tachycardia and general discomfort in preachers, singers, actors and audience which too often led to imaginary relief being

sought in alcohol. Now with electric illumination the air remains uncontaminated, and this must be placed alongside the incomparably better lighting provided as amongst the advantages offered by our modern applied science.

The earliest form of spectacles was simply the convex lens, which corrected presbyopia and hypermetropia, but made no improvement in astigmatism. Many claims have been made regarding the original invention, but uncertainty prevails. Italians put forward the name of a Florentine who earned the epitaph: "Here lies Salvino d'Armati of Florence, the inventor of spectacles. God forgive him his sins. Died in the year of our Lord 1317." Shakespeare's description of the old man "with spectacles on nose" is familiar to all. The correction of myopia with concave lenses and the use of convex glasses in hypermetropia and the presbyopia of elderly folk were described accurately by Voltaire, who, however, was merely retailing information obtained second hand. Astigmatism was first described and properly investigated in the nineteenth century, and soon the method of measuring the departure of the cornea from true sphericity was elaborated, allowing correcting glasses to be prescribed. Reading with uncorrected astigmatism was always difficult and often impossible unless the print was large. This explains the vogue of the folio and quarto. It also explains the very clear type of the Elzevir family in Amsterdam (1592-1680). These two modern developments, better and healthier illumination and better correction of visual defects, have helped materially in facilitating the labours of the expert in covering the literature of his specialty, but that there is a limit cannot be denied. The old limit has been pushed well onward, but it is still there, and one of the problems of the future is how the difficulties attending this limit can be surmounted.

Current Comment.

GENETICS OF TWINNING.

A good deal of interesting information on the genetics of twinning has been brought together in a recently published monograph by Norma McArthur, of the Department of Demography of the Australian National University in Canberra. The monograph is the first of the Australian National University Social Science Monographs. It consists essentially of a review of the literature pertaining to genetic and statistical studies of twinning, examined critically and summarized with appropriate comment. The examination of the literature covers practically one hundred years, beginning with the first published analysis of birth statistics, that of Veit in 1855. It appears that up till the beginning of the present century it was generally assumed that both monovular and binovular types of twinning were due to hereditary factors. Then in 1901 Weinberg reported his classical studies, the several data from which were, as McArthur puts it, "consistent in their demonstration of the heritability [*sic*] of a tendency to binovular twinning only". She points out further that there is evidence from these data that the hereditary factor, which Weinberg assumed at first to be a gene inherited as a simple Mendelian recessive, but later considered was more probably a series of multiple allelomorphs, is limited to expression in the mother and her female relatives. Various subsequent investigators supported the view that the tendency to binovular, but not to monovular, twinning was inherited; but there was less agreement about the type of heredity involved. On the other hand, opponents of Weinberg's conclusions were not lacking, and a good deal of conflicting evidence has been brought forward. McArthur sums up the position in the statement that while almost all investigators are agreed that the maternal hereditary constitution is important in binovular twinning, there is considerable disagreement on the role of paternal heredity and the hereditary nature of diembryony (that is, monovular twinning).

Turning to other aspects of the subject, McArthur states that in the analyses of popular statistics, there is general agreement about the occurrence of a maximum frequency of twinning at the period of minimum fertility of the mother—that is, between the ages of thirty-five and thirty-nine years; this increase is usually ascribed to binovular twinning. It is generally held that paternal age is not related to frequency of twinning. It also seems clear that increasing birth-rank (that is, number of previous births) is associated with greater frequency of twinning, but opinion varies on the relative ætiological effects of maternal age and birth-rank. In this, as in a number of other aspects of the general subject, McArthur's wide survey serves to emphasize the variety of data recorded and the conflicting inferences drawn by different investigators. Nevertheless, much important information has been obtained, and this monograph makes it available in perspective to all who are interested in the genetics of twinning.

SPRUE.

Sprue is a chronic wasting disease, which by most modern observers is classified among the deficiency states. The disease is amenable to replacement therapy with liver extract, folic acid, folinic acid and vitamin B_{12} in addition to a diet of high protein and low fat content. R. Rodriguez-Molina,[1] from an intensive study of 100 selected cases in Puerto Rico, has given a detailed account of the symptomatology and some suggestions on the ætiology and clinical relationships of the disease. In this paper the term sprue is intended to comprise the tropical and non-tropical variety (idiopathic steatorrhœa). The underlying pathological physiology in the syndrome is primarily related to the small intestine, presenting itself as a small bowel dysfunction, that is, a defect in intestinal absorption. The derangement of the gastro-intestinal system occurs early in the course of the disease and is manifested clinically by gastro-intestinal disturbances, which may (and often do) precede the presence of anæmia. At some time during the course of the disease, but probably during the active phase, this defect is accompanied anatomically by hyperæmia and œdema of the intestinal wall, and by marked distension of the gut; histologically by atrophy of the mucosa of jejunum and ileum and degenerative changes in Auerbach's plexus; physiologically, by inability of the intramural nervous apparatus of the intestine to produce acetylcholine; and clinically by the variety of objective gastro-intestinal disturbances. These changes are usually, though not invariably, associated with the presence of macrocytic, hyperchromic anæmia, leucopenia and thrombocytopenia, of hyperblastic marrow with a megaloblastic increase, of a low or flat glucose tolerance curve, of low serum protein values, and of an increase in the amount of split fat in the stools. There are some differences between sprue encountered in the tropics and that observed in temperate zones; for example, hypocalcæmia is frequently observed in sprue occurring in cold climates but is seldom seen in the tropics, bone changes are rarely observed in tropical sprue, and hypoprothrombinæmia is encountered more commonly in cold climates than in the tropics. Rodriguez-Molina considers that our present knowledge points to a dietary deficiency in animal proteins and fresh vegetables. He considers, too, that the epidemiological evidence points to dietary insufficiencies as the basic cause of the disease. However, those with extensive experience in the treatment of tropical sprue will probably agree that, while defective absorption of proteins, fats and vitamins may be respon-

[1] *Ann. Int. Med.*, January, 1954.

sible for many of the manifestations of the disease, there is some other, as yet unknown, factor, which is responsible for the early defect in absorption. Some of the patients come from well-to-do families, in which there is no evidence of deficiencies in the diet. Rodriguez-Molina states: "With the available clinical and laboratory evidence at hand we can now restate and reemphasize what Thayson said several years ago, that pernicious anæmia, sprue (tropical and nontropical), cœliac disease, nutritional macrocytic anæmia and pellagra are closely related and allied diseases, probably having a common denominator, yet differing significantly in the body systems affected and in the emphasis by which they are so affected. In all these conditions gastro-intestinal abnormalities, anæmia and nervous manifestations are encountered, but the emphasis of such symptoms is very differently placed." A point not discussed in this paper is that the common factor in all these conditions is malabsorption of a number of different vitamins and possibly proteins and fats, but the cause of the malabsorption may not be and probably is not the same in all the conditions.

COMA MECHANISMS.

FUNDAMENTAL FEATURES in the metabolism of the central nervous system are that glucose is the essential metabolite for the cells of the brain and that the brain uses a considerable amount of oxygen. Anything which interferes with the supply of glucose and oxygen to the brain cells or with the utilization of these substances by the brain cells will have serious effects on the activity of the brain. J. F. Fazekas and A. L. Bessman[1] have made a detailed study of the relation between coma and disturbances in the enzymatically catalysed reactions between glucose and oxygen in the brain cells. Cerebral metabolic disturbances may be classified as (i) substrate insufficiency due to decreased blood concentration, reduced cerebral blood flow or impaired diffusion from capillaries to cells, (ii) enzymatic disturbances from lack of enzyme activators, inhibition of enzymatic activity, dissociation of enzyme oxidation or destruction of enzymes, (iii) oxygen insufficiency from decreased blood concentration, reduced cerebral blood flow or impaired diffusion from capillaries to cells, and (iv) multiple causes. All these types can be found in coma in various conditions.

Coma from decreased supply of glucose may be seen with the hypoglycæmia resulting from overdosage with insulin. In this condition there is a considerable reduction in cerebral oxygen consumption. If glucose is given soon enough, the oxygen consumption rises rapidly with return to normal. Reduced cerebral blood flow may account for the fact that some elderly diabetic subjects with arteriosclerosis develop hypoglycæmic symptoms when the blood sugar is reduced to normal levels. Little is known about impairment in the diffusion of glucose from blood to cells. A number of enzyme systems, ten or more, are directly concerned in the complete oxidation of glucose to carbon dioxide and water in the brain cells, and interference with any one of these will cause serious disturbances in the cell metabolism. Many of the enzyme systems consist of a protein part which is substrate specific and a co-enzyme or activator, a non-protein part, which is reaction specific. Several of the *B* vitamins take part in the constitution of these co-enzymes, and deficiency of these vitamins interferes with the activity of selected areas of the central nervous system, probably because of their greater requirements, and with all the cells of the body, so that the patient succumbs before the level in the brain is sufficiently reduced to bring about coma. One such deficiency state, in which the main deficiency is of thiamine, is Wernicke's syndrome. In this there is reduction of oxygen consumption by the brain, which returns toward normal after the administration of thiamine. In pellagra the main deficiency is of niacin, and the unconsciousness and other brain symptoms are well known. In vitamin B_{12} deficiency there is a good correlation between the mental status defects and cerebral oxygen consumption. Inhibition of enzyme activity in the brain cells can be produced by various substances, such as heavy metals, particularly lead and arsenic. These may act by combining with the thiol groups of tissue enzymes or co-enzymes. In diabetic coma there is marked depression of cerebral oxygen consumption, and this must be attributed to inhibition of cerebral enzymatic activity. The mechanism of this inhibition is not known, but there is no support for the contention that it is due to ketone bodies. Recently Weil-Malherbe has demonstrated a substance in the plasma of patients in diabetic coma which inhibits hexokinase activity. In uræmic and hepatic coma there is evidence of a breakdown in carbohydrate metabolism resulting from inhibition of enzymatic activity due to unknown circulating poisons.

Functional impairment of the central nervous system by barbiturates and alcohol may be due to "uncoupling", that is, a dissociation of the process of the formation of high energy phosphate bonds from oxidation. Comas associated with virus infection, and possibly the degenerative diseases of the central nervous system, may be due primarily to a destruction or inactivation of enzymes essential for neuronal activity. Mice infected with the Lansing strain of poliomyelitis virus and those infected with the Theiler FA strain of mouse encephalitis virus showed impairment of brain glycolysis. The enzyme found to be affected was triosephosphate dehydrogenase. The adult brain cannot function for even short periods of time anaerobically and reduction of oxygen can seriously affect the brain. Reduction of oxygen to the brain can result from several causes—for example, reduced cerebral blood flow as in aortic stenosis, coronary occlusion, Stokes-Adams syndrome and secondary shock. The comas associated with space-occupying lesions of the central nervous system, such as tumours and traumatic head injuries, have multiple ætiologies—disturbance of blood circulation, impairment of diffusion of essential metabolites because of altered tensions in the extracellular and intracellular spaces and so on. Some forms of coma are due to localized disturbances, for example, in the region of the third ventricle; the metabolism of the brain, as a whole, is not seriously affected.

[1] *Am. J. Med.*, December, 1953.

CONGENITAL FUNNEL-CHEST DEFORMITY.

WHILE congenital funnel-chest deformity has been recognized for many years, its adequate surgical correction is a relatively recent development. A variety of names have been applied to the condition, including *Trichterbrust*, koilosternia, *pectus excavatum* and chonechondrosternon, but the term funnel chest is descriptive and commonly used. It is defined by A. L. Brown[1] as "that deformity of the thoracic cage characterized by a funnel-shaped depression of the sternum, the apex of which is located at approximately the level of the junction of the xiphoid with the body, or gladiolus". The cause of the funnel-chest deformity is not well understood, but there appears to be a strong hereditary factor. According to E. B. Mahoney and G. L. Emerson,[2] the primary defect seems to be a maldevelopment of the anterior musculature of the diaphragm with a shortening of the central tendon; this causes an unnatural pull on the sternum and the lower ribs. Brown adds to it a thickening of the substernal ligament at the lower end of the body of the sternum.

The most prominent symptoms produced by the deformity in infancy are respiratory and gastro-intestinal. Noisy stertorous respiration is common, especially during sleep, and frequent respiratory infections occur. Most of the infants are underweight, and usually they present feeding problems. The symptoms produced in older children are usually not severe, but the deformity increases. As the patient reaches adolescence or young adult life a variety of conditions may develop. Cardiac symptoms may be serious and include palpitation, dyspnœa with exertion,

[1] *J. Thoracic Surg.*, December, 1939.
[2] *Arch. Surg.*, October, 1953.

precordial pain and tachycardia. Exercise tolerance is usually decreased, and the psychological effect of the poor posture and the sunken chest is especially distressing. The improvement following operation for correction of the deformity is so great that the patients or their parents are amazed, and not until then do they realize the subtle effects of the handicap. The operation devised by Brown is of a "limited" type and consists essentially of division of the soft-tissue attachments to the sternum—the substernal ligament (which Brown considers to be a continuation of the *linea alba*) and the sternal attachments of the diaphragm. Mahoney and Emerson consider that this "limited" operation should be used only for infants with severe deformity and retraction who are having symptoms. They state that the symptomatic improvement is often dramatic, but they still consider that most of the children will require a secondary operation. They prefer, if it is practicable, to wait and to carry out the "complete" operation when the child is older. In this operation the attachments of the pectoral muscles are reflected laterally to beyond the costo-chondral junctions, the rib cartilages are divided, and the posterior attachments of the sternum are divided to the upper border of the deformity between the second and third intercostal spaces. This allows the pleura and pericardium to drop posteriorly, and the heart shifts to the normal position. A transverse cuneiform osteotomy is then performed between the second and third intercostal spaces, and the sternum is held in its corrected position with silk sutures. Several osteotomies may be needed to mould the sternum to its normal contour. The excess cartilage is then resected, and the third and fourth cartilages are usually resutured; the lower cartilages are usually left free. Mahoney and Emerson consider that the age of about five years is the optimal time for this operation for four reasons: the full extent of the deformity is evident; the secondary effects such as kyphosis have not become permanently established; the cartilaginous structures are still pliable and can be readily manipulated; the deformity is corrected before the child enters school. Their own experience has been with 18 cases of funnel-chest deformity over a period of five years. In this series six infants were treated by the "limited" operation; all had immediate relief of symptoms, but four have persistent deformity and further operation in the future is considered necessary. Twelve children underwent the "complete" operation; ten have obtained excellent results, but one has a 50% recurrence and will need a further operation, and one has developed slight rotation of the sternum. Most important, there have been no operative deaths, and the children tolerated the operation well.

MICHAEL SERVETUS.

WITH the innocent intention of satisfying his natural curiosity and of exercising his linguistic abilities, Charles Donald O'Malley, a classical scholar from the Stanford University, California, some years ago made a search for writings of Michael Servetus, and then began translating a few of them into English from the Latin texts. Under the happy auspices of the Department of the History of Medicine in Yale University, a rare and scholarly translation of the non-theological writings of Servetus is now published for historians to read and digest.[1] This splendid accomplishment seems to provide yet another instance of a conscientious and persistent investigator, who is willing to slave away at a thankless and tiresome task, knowing full well that the final product of his exertions may have little interest or appeal to the vast majority of readers. In this case, the translator could not have proceeded far upon this enterprise without realizing that he was about to expose the vapourings of a mediæval mind, and that the heretical theologian was indeed no friend of the Renaissance. To us, however, the book was nothing short of a revelation; it seemed to shatter with atomic violence the entrancing legend built up over the years around the life and death of this martyr of science and free thought. It helps to confirm our previously considered opinion that it is high time this great historical figure was exposed as an inveterate imitator and a psychoneurotic crank. The book contains translations in impeccable English of treatises by Michael Villanovanus (an alias he adopted for many years) on "Ptolemy's Geography", "The Apology Against Fuchs", "The Syrups" (taken from Galen), "The Discourse in Favour of Astrology", and, lastly, "The Description of the Lesser Circulation" (from his theological work, *The Christianismi Restitutio*, 1553). O'Malley's notes prefacing each translation are most helpful and illuminating; but he fails to mention the description of the pulmonary circulation given by a famous Arabian physician, nearly three hundred years before Servetus's description was published.

[1] "Michael Servetus: A Translation of His Geographical, Medical and Astrological Writings with Introductions and Notes", by Charles Donald O'Malley; 1953. Philadelphia: American Philosophical Society. London: Lloyd-Luke (Medical Books), Limited. 9" x 6", pp. 208, with seven illustrations. Price: 21s.

ADEQUATE BREAST BIOPSY.

A REMARKABLE controversy has raged about the value of treatment of breast cancer, and it is certain that some of the favourable results claimed take on a different aspect when examined in a critical statistical light. However, a completely pessimistic view seems unwarranted, and early diagnosis remains important. This, according to T. A. Shallow, F. B. Wagner, junior, and R. E. Colcher,[1] demands prompt biopsy of any localized area that varies from the surrounding tissue. "Watchful waiting" is denounced as a dangerous policy that may deprive the patient of treatment during the period of curability. Adequate biopsy is stated to consist of the removal of sufficient breast tissue to reveal the presence of any obvious or occult cancer by immediate thorough pathological examination. In a series of 1000 patients operated on over a period of ten years, Shallow, Wagner and Colcher have found cancer in 26% of cases, using the following criteria. First, wide excisional biopsy is regarded as particularly indicated when the clinical diagnosis is thought to be localized cystic hyperplasia, since unsuspected cancer may be found or may coexist. Second, all patients with discharge from the nipple are regarded as "cancer suspects", whether or not a mass is palpable in the breast; the taking of a wide excisional specimen for biopsy is recommended, since multiple lesions are often present. Third, one should not hesitate to perform bilateral breast biopsy, even when the frozen section report from the more suspicious side states that the tissue is benign. Fourth, recurrent tumours of the breast are considered to deserve biopsy just as promptly as the initial ones, since the chances of cancer are just as great. Fifth, biopsy of the male breast should not be neglected, since cancer does occur here; the procedure advocated is removal of all breast tissue for examination, with preservation of the nipple. In the proper management of the biopsy procedure, the following points are regarded as important: pre-operative study to rule out metastasis or surgical handicaps; psychological conditioning of the patient to the possibility of radical mastectomy; making sure of the availability of blood; close liaison between surgeon and pathologist; avoidance of local anæsthesia and out-patient biopsy; arrangement for operating theatre and personnel to be available for immediate radical mastectomy, if necessary.

Shallow, Wagner and Colcher present a comparative table showing the incidence of various clinical features in relation to benign and malignant lesions. It is illuminating in that, while it may justify generalizations about the clinical picture in the presence or absence of cancer, it also justifies (in relation to any particular case) the statement made by these investigators that "there are no clinical signs that reassure against cancer". In this series cancer was sometimes found in patients whose presenting diagnostic criteria were in favour of benign lesions; indeed, the incidence of this was 13·5%. Of the

[1] *Arch. Surg.*, October, 1953.

cancer patients 22·4% had pain or tenderness in the breast, 20% had lesions one centimetre or less in diameter (so that the smallest lesion may well be malignant), 18·3% had discharge from the nipple and 6·2% had a diffuse rather than localized change in the breast. Cancer was associated histologically with cystic hyperplasia in 15·4% of cases, and in many of these it was not suspected clinically. Cancer existed in the less suspicious breast in 3·1% of patients subjected to bilateral biopsy, a finding which justifies the recommendation that a report of benign findings from the first side should not dissuade the surgeon from performing biopsy on the other.

In any discussion of this kind, the question arises of histological criteria of malignant or benign tissue. These are not readily conveyed in a paper, and Shallow, Wagner and Colcher make no attempt to define them. However, all the patients were personally managed by the senior author, so that there was uniformity within the series not only in biopsy criteria, but also in clinical evaluation and operative technique. In any case the evidence brought forward is sufficient to discourage a *laissez-faire* attitude on breast biopsy.

RHEUMATIC FEVER.

In the Milroy lectures of the Royal College of Physicians delivered in February of this year D. A. Long discusses at length the pathogenesis of rheumatic fever.[1] The author describes some new ideas as to the relationship of infection with group A streptococci with rheumatic fever and suggests other factors which may be involved. Serological responses in patients with rheumatic fever are indistinguishable from those associated with chronic streptococcal infection; nor has an increased incidence of rheumatic fever been associated with any particular type or strain of group A streptococcus. It is therefore probable that, provided certain criteria are fulfilled, some general property of group A streptococci initiates the disease in susceptible persons. The infection must persist for approximately three weeks; if this stage is interrupted by chemotherapy or antibiotic treatment, the disease does not occur, but once the syndrome has developed, such therapy is ineffective. It is possible that sensitivity to streptococcal allergens may start the disease. Only a small proportion of patients with hæmolytic streptococcal infection develop rheumatic fever. These patients show a persistent low-grade localized streptococcal infection in spite of remarkably high antitoxin titres; predisposition by one attack of rheumatic fever to another; a decreasing time interval between infection and recurrence; dermal hypersensitivity to streptococcal allergens; and a delayed tuberculin type of reactivity following intravenous injection of streptococcal allergens. All these suggest that rheumatic fever is initiated by hypersensitivity, of the tuberculin type, to streptococcal allergens. The histological changes are not like those usually associated with pyogenic cocci, but resemble more those in tuberculous infection. Bacterial allergy of the tuberculin type is associated typically with low grade, persistent, comparatively avirulent foci of streptococcal or tuberculous infection. Such sensitivity is independent of circulating antibody, but can be transferred with cells. The anaphylactic type of sensitivity is quite different and is not related to naturally occurring disease in man. Hypersensitivity may develop in the post-streptococcal state without symptoms of rheumatic fever, but rheumatic carditis often occurs without a history of rheumatic fever, the post-streptococcal state merging imperceptibly into the rheumatic syndrome. There must be something provided by group A streptococci in general, in addition to an allergen, essential to the pathogenesis of rheumatic fever. The author suggests that mesenchymal cells damaged by streptococcal toxin are more sensitive than undamaged cells to bacterial allergens, and that hæmolytic streptococci provide both allergens and comparatively innocuous toxins which act synergistically upon the same cells. In support of this group A streptococci produce a rather innocuous, heat-labile exotoxin which increases sensitivity to tuberculin in sensitized guinea-pigs. Exotoxins from other bacteria do not have this property. There are many factors which may influence susceptibility to rheumatic fever, and the author considers the effect of various dietary deficiencies and of hormones without arriving at any very definite conclusions as to how these may act. The author also discusses at some length evidence from animal experiments. He reaches the conclusion that the guinea-pig is the animal of choice for study because the rheumatic fever patient and the BCG infected guinea-pig are alike: (*a*) in showing bacterial allergy of the tuberculin type; (*b*) in their inability to synthesize ascorbic acid; (*c*) in their response to cortisone; and (*d*) in the fact that their susceptibility is decreased by diabetogenic agents and by hyperthyroidism and hypothyroidism. There is profound species difference in response to cortisone. Man, monkey and guinea-pig are resistant, and the rat, mouse, rabbit and ferret are sensitive to its action in depressing antitoxin synthesis and other effects. Cortisone activity comes in for considerable discussion. Cortisone does not exert a non-specific anti-inflammatory action in the skin of the guinea-pig; it is without effect on allergic phenomena, but depresses sensitivity to delayed allergic responses of the tuberculin type. It is suggested that cortisone protects guinea-pig skin from the toxic products liberated by the union of tuberculin antibody and allergen. It is unlikely that cortisone exerts this anti-allergic activity by inducing qualitative or quantitative changes in antibody or by interfering with the union of antibody and allergen. The desensitizing effect of cortisone is certainly indirect. The author gives a theoretical discussion on the relation of the activity of cortisone to the biochemistry of –SH groups, protein and carbohydrate metabolism and ascorbic acid, but this is not very convincing.

[1] *Lancet*, March 13, 1954.

SPLENOPORTOGRAPHY.

Splenoportography is a new diagnostic procedure involving the visualization of the splenic and portal veins in X-ray examination. This is accomplished by injecting contrast media directly into the spleen. The simplicity of the method and its obvious diagnostic possibilities have prompted a report by D. Cooper, R. Brown, C. H. Stone and L. K. Ferguson.[1] With the patient lying supine on the X-ray examination table the point of puncture is chosen. Palpable spleens are easily penetrated through the tenth intercostal space in the mid-axillary line. For small spleens, the puncture is best made in the ninth intercostal space as far posteriorly as the supine position will allow. After infiltration with procaine, a three-inch needle is introduced through the peritoneum until the scrubbing sensation of the splenic respiratory movement is felt. The patient then inspires and holds his breath. The needle is thrust two centimetres into the spleen, and 20 mils of 75% "Diodrast" or "Uricon" solution are injected in four seconds. On the fourth second, the first exposure is made. The needle is withdrawn, and serial exposures are made as fast as the cassettes can be changed.

Cooper and his colleagues believe that splenoportography has proved its value. They state that in patients with portal hypertension, the potency of a porto-caval anastomosis can be determined with ease and accuracy. As a pre-operative test, intrahepatic and extrahepatic portal blocks can be differentiated, and it would seem probable that cavernous transformation of the portal vein could be revealed pre-operatively. The study of normal control patients is essential before certain facts can be established. Cooper *et alii* discuss the varying opinions about the danger of any form of splenic puncture, but they do not consider that splenoportography is hazardous and regard it as justified if there is an indication for the study. If uncontrollable hæmorrhage from the spleen should arise, splenectomy would have to be carried out. For this reason, they hesitate to perform splenic injection on any patient who cannot safely undergo splenectomy.

[1] *Ann. Surg.*, October, 1953.

Abstracts from Medical Literature.

PHYSIOLOGY.

Physical Methods Simulating Mechanisms of the Human Cough.

A. L. BARACH, G. J. BECK, H. A. BICKERMAN AND H. E. SEANOR (*J. Appl. Physiol.*, August, 1952) describe two physical methods which simulate some of the mechanisms of the human cough. The simplest method, termed exsufflation, depends on full inflation of the lungs by a pressure of 40 millimetres of mercury, followed by an abrupt termination of expiratory pressure in 0·06 second. With this method the relaxation pressure of the lungs and surrounding structures was found to bring about a maximal expiratory volume flow rate approximately 60% of that recorded in the most vigorous cough of normal subjects. In patients with poliomyelitis who had breathing difficulties and a weak cough, the maximal expiratory volume flow rate during exsufflation and during exsufflation combined with manual compression was 145% and 171% of their most vigorous natural cough. When the respirator was conventionally employed at a peak negative pressure of 22 centimetres, the mean tank pressure was 8·0 centimetres of water; with the use of exsufflation, at the same peak pressure, the mean tank pressure was 5·0 centimetres of water. The average rise in mean venous pressure of ten normal subjects, when ventilation was carried out with routine respirator operation and with exsufflation, was 36 and 19 millimetres of water respectively. The principle of the mechanical cough chamber depends upon sudden decompression of one-seventh of an atmosphere at the same time as an increased pressure is momentarily applied to the chest wall and abdomen. The immobilizing lung pressure chamber was modified to provide (*a*) a sudden decrease in pressure in the head end, from 110 millimetres of mercury above the atmosphere to atmospheric pressure in 0·08 second, which results in a swift expansion of gases within the lungs, and (*b*) a close-fitting baffle around the neck which produces an initial pressure in the body compartment 40 millimetres higher than that in the head end. Additional factors which are involved in the mechanisms employed to eliminate bronchial secretions include (*a*) upward movement of the diaphragm and (*b*) dilatation of the bronchi at the peak positive pressure, with abrupt contraction and shortening of the bronchial tree during the expiratory cycle.

Exchange of Water Between Blood and Tissues.

I. S. EDELMAN (*Am. J. Physiol.*, November, 1952) presents deuterium oxide arterial disappearance curves in five humans, eleven dogs and one cat. In all cases two exponential rates of distribution were adequate to describe the decline in deuterium oxide concentration from one minute after injection to equilibrium of distribution at the end of three hours. This decline in deuterium oxide concentration is correlated in time with dilution by cell water. Simultaneous arterial and venous curves, in one dog and three human subjects, demonstrate large deuterium oxide concentration gradients in the early phase of deuterium oxide distribution. The time-course of appearance of deuterium oxide in tissue-water relative to arterial-blood-water in brain, liver, gastric juice, cisternal cerebro-spinal fluid and urine is described. From these curves it is inferred that there is a spectrum of water exchange rates, with brain, liver and stomach exchanging water more rapidly than skeletal muscle, cerebro-spinal fluid and bone. These data indicate that each tissue exchanges water at independent and characteristic rates. The distribution of deuterium oxide in the perfused hind limb of the cat can be described as a single rate process. By application of the Fick principle it was concluded that equilibration of deuterium oxide with cell-water accounts for virtually all the distribution time. In-vitro dialysis of deuterium oxide-enriched skeletal muscle in Ringer's solution is interpreted in terms of cell hindrance to the diffusion of water. A critique is given of calculations of rates of cell-water exchanges from the constants of deuterium oxide arterial disappearance curves.

Ascorbic Acid and Acclimatization to Cold in Monkeys.

L. P. DUGAL AND G. FORTIER (*J. Appl. Physiol.*, September, 1952) report that monkeys (*Macacus rhesus*) pre-exposed to mild cold (10° C.) during six months and receiving daily 25 milligrammes of ascorbic acid do not resist intense cold better than the controls kept at room temperature and receiving daily the same amount of vitamin *C*. On the contrary, monkeys pre-exposed to the same mild cold environment for the same period but receiving at the same time daily 325 milligrammes of ascorbic acid are far more resistant to intense cold than (*a*) the controls kept at room temperature and (*b*) the other group also pre-exposed to cold but receiving daily only 25 milligrammes of ascorbic acid. Resistance to cold was estimated by the ability of the different groups or individuals to maintain their rectal and intramuscular temperatures when exposed suddenly at −20° C.

Elimination of Radiopaque Material from the Bronchi of Dogs.

H. A. BICKERMAN, G. J. BECK, C. GORDON AND A. L. BARACH (*J. Appl. Physiol.*, August, 1952) discuss the effectiveness of two physical methods of eliminating radiopaque material from the bronchi of anæsthetized dogs. A 24% aqueous suspension of "Thorotrast" thickened with mucin was employed as the contrast medium and instilled by bronchoscope into the lower lobe of the right lung of treated and control animals. In 15 of 19 dogs exposed for two hours to high expiratory flow rates produced in the exsufflator, X-ray examination of the bronchi revealed definite decrease in the amount of contrast medium retained, that is, approximately 70% of the material introduced. The forces involved in this procedure include (i) a high expiratory flow rate of air, approximately 65% of that of a vigorous cough, (ii) a twofold dilatation of the medium-sized bronchi, and (iii) abrupt narrowing and shortening of the bronchial tree during the high velocity expiration. The relaxation pressure of the lungs and surrounding structures is responsible for the high expiratory flow rates and the abrupt decrease in bronchial diameters. In 24 dogs treated for one and two hours in the mechanical cough chamber, over 90% of the instilled contrast medium was eliminated in all instances. In an equal number of control animals negligible changes in the bronchogram were observed. The physical forces operating in this procedure simulate more nearly those employed in an effective human cough; these include prevention of expansion of the lungs, compression of the chest and abdomen, pressures that tend to elevate the diaphragm and a rapid outflow of air from the lungs.

Estimation of Heart Output from Electrokymographic Measurements in Human Subjects.

G. C. RING *et alii* (*J. Appl. Physiol.*, September, 1952) report that a formula for the estimation of heart output from electrokymographic records has been developed. The electrokymograph records the movements of the heart. The instrument actually measures changes in the intensity of X rays reaching a fluorescent screen and photomultiplier tube. When a structure such as the heart changes in thickness, the absorption of X rays is altered; this, in turn, affects the fluorescent light produced by the X rays and thereby the amplitude of the photoelectric signal. The formula derived is: stroke volume = $13{\cdot}6 \times DT^3$; where D is the transverse diameter of the heart (in centimetres) and T is the average inward movement (in centimetres) when records are obtained with the subjects lying in the following positions: antero-posterior, 10° right anterior oblique and 10° left anterior oblique. This formula is satisfactory if the inward movements recorded by the electrokymograph (EKY) are not shortened by distortions to less than 0·20 second. If it is assumed that the method involving the Stewart principle is correct, the standard deviation in 36 subjects having suitable EKY records was ±17. In the cases in which the formula proved unsatisfactory there was a shortening of the EKY records, apparently resulting from an unusual positional movement of the heart toward the end of the systole. It is postulated that this movement in a few individuals is toward the left, and that in most persons the movement is toward the right. The rotatory movements usually described for the human heart do not explain the differences between the EKY records obtained when patients are rotated from one position to another. The formula given has been tested with strokes as low as 55 mils and as high as 147 mils and with rates as slow as 27 and as fast as 113 per minute. This method is believed to be more accurate than an older method with EKY in which breath-holding was necessary.

Lifespan of Leucocytes in Man.

D. L. KLINE AND E. E. CLIFTON (*J. Appl. Physiol.*, August, 1952) describe a method for estimation of the lifespan of leucocytes by incorporations of P^{32} in the desoxypentose nucleic acid under physiological conditions. With this method the lifespan of the average

white blood cell is estimated to be 13·2 days. The time the cells actually circulate in the blood-stream is estimated to be 9·2 days.

The Production of Murmurs.

S. RODBARD AND H. SAIKI (*Am. Heart J.*, November, 1953) have studied the flow of liquid through collapsible tubes by means of pressure and sound recordings, stroboscopy and high-speed cinematography. They have found that flow through a partially stenotic collapsible vessel sets up a repetitive opening and closing of the tube. Drops of a specific shape are extruded as a result of this flittering motion, and sounds with a murmur-like quality are produced. The mechanism of murmur production is seen as due to the repetitive interchange at rapid rates of the energy of the stream from lateral pressure to velocity.

BIOCHEMISTRY.

Metabolism of Erythrocytes.

D. RUBINSTEIN AND O. DENSTEDT (*J. Biol. Chem.*, October, 1953) have examined chicken erythrocytes for the presence of various enzymes of the Krebs cycle, and evidence has been indicated for the presence of all except a specific oxalacetic decarboxylase. The hæmolysate of chicken erythrocytes was divided into the particulate (nuclear) and soluble (cytoplasmic) fractions. Evidence is presented that the metabolic activity of the particulate fraction of the hæmolysate is attributable chiefly to the nuclear material. Succinoxidase, malic dehydrogenase and fumarase have been found to be associated with the particulate fraction, while aconitase and isocitric dehydrogenase are present mainly in the cytoplasmic fraction. Chicken erythrocytes do not utilize glucose during preservation for thirty days at 5°, but they are capable of utilizing the residual intermediates and end-products of glycolysis.

Lard.

J. LOWE AND R. A. MORTON (*Biochem. J.*, November, 1953) have confirmed the claim that lard contains a vitamin *A*-replacing factor. A molecular distillate cured xerophthalmia and restored normal growth in avitaminotic rats. Neither preformed vitamin *A* nor carotenoid provitamin *A* could be detected by spectrophotometric or colorimetric tests on lard or lard unsaponifiable matter before or after chromatography, or on lard distillate.

Ferritin.

A. SHODEN *et alii* (*J. Biol. Chem.*, October, 1953) have fractionated quantitatively human and rabbit tissues of widely varying iron content in order to determine the pattern of distribution of ferritin and hæmosiderin iron. At physiological levels of tissue iron a slight preponderance of ferritin over hæmosiderin iron was found. With increasing concentration of iron, hæmosiderin stores predominated. At high levels, additional storage iron was reflected by a quantitative increase in hæmosiderin. Radioiron, administered orally or parenterally in tracer amounts, was stored as hæmosiderin as well as ferritin, and, when mobilization of iron occurs, it has been shown to be derived from both ferritin and hæmosiderin fractions of the tissue. The results indicate that these two types of storage iron are intimately associated and are functionally indistinguishable. It appears likely that these compounds differ only in physical form.

Bilirubin.

V. A. NAJJAR AND B. CHILDS (*J. Biol. Chem.*, September, 1953) have described a method for the crystallization of indirect bilirubin from serum. With ammonium sulphate fractionation of serum the direct pigment is precipitated with the albumin fraction and the indirect with the globulin fraction. There is strong suggestive evidence that the direct bilirubin is a metal complex, although direct and conclusive evidence is still lacking.

Phenol.

D. V. PORKE AND R. T. WILLIAMS (*Biochem. J.*, September, 1953) have used ^{14}C-labelled benzene in rabbits and shown that 6% to 8% of an oral dose of 150 to 500 milligrammes per kilogram is excreted as phenyl-glucusonide and 11% to 14% as phenylsulphuric acid. At a dose level of 50 to 60 milligrammes per kilogram orally administered phenol can be almost entirely accounted for as urinary metabolites in two days after dosing. These metabolites are phenyl-glucusonide (40% to 50%), phenylsulphuric acid (about 45%), quinol (about 10%) and catechol (0·5% to 1·0%). Orally administered phenol does not give rise to any of the isomers of muconic acid or to phenylmercapturic acid.

Alcohol.

J. J. VITALE *et alii* (*J. Biol. Chem.*, September, 1953) have studied the rate of alcohol metabolism in rats administered varying doses of alcohol, using ethanol-1-C^{14} and measuring the $C^{14}O_2$ excreted in the expired air. The rate of alcohol oxidation was found to be directly proportional to the dose administered up to a maximum at about 2·5 to 3·0 grammes per kilogram of body weight. At higher dosages the absolute rate in milligrammes per hour per kilogram of body weight declines. Fasting greatly increases the rate of alcohol oxidation at the higher levels of alcohol administration and is dependent upon length of fasting. Fasting also decreases the ability of liver homogenates to oxidize alcohol *in vitro*. The effect of fasting is interpreted as a loss of liver enzymes necessary for alcohol oxidation.

Zinc.

C. A. MAWSON AND M. I. FISCHER (*Biochem. J.*, November, 1953) have reported that zinc occurs in high concentration in human semen. The highest concentration of zinc is found in the first fraction of the ejaculate, which is mainly composed of prostatic secretion. Spermatozoa contain a higher concentration of zinc than any other human tissue yet examined. The zinc contained in seminal plasma is partly in a dialysable form. Seminal plasma contains negligible amounts of carbonic anhydrase. A little carbonic anhydrase is found in spermatozoa, but only about 0·05% of the zinc present in the sperm can be accounted for in this way.

R. VAN REEM (*Arch. Biochem.*, October, 1953) has studied the effects of feeding excessive amounts of zinc on liver enzymes of the rat. A dietary level of 500 to 700 milligrammes *per centum* of zinc resulted in a marked reduction in liver catalase and cytochrome oxidase activities. Copper feeding, along with toxic zinc levels, resulted in an increase of liver catalase and cytochrome oxidase activities to normal values. While copper supplementation influenced the liver enzymes, it had no effect in correcting the growth inhibition produced by zinc.

Calcification.

A. HIRSCHMAN *et alii* (*J. Biol. Chem.*, September, 1953) report that X-ray diffraction patterns of the material which is deposited in calcification *in vitro* show only the apatite lines, despite the wide variation in chemical composition. Preformed bone gives identical patterns, except for orientation in some areas. X-ray diffraction patterns fail to reveal the presence of calcium acid phosphate postulated as the first aggregate formed in calcification. This, however, does not exclude calcium acid phosphate from consideration, since calcium acid phosphate is converted to apatite when placed in solutions employed for calcification *in vitro*.

Glycolysis.

B. BLOOM *et alii* (*J. Biol. Chem.*, October, 1953) have studied the isotopic composition of carbon dioxide produced by intact rats, liver and kidney slices, and diaphragm sections, using glucose-U-C^{14}, glucose-1-C^{14}, lactate-1-C^{14}, lactate-2-C^{14} and lactate-3-C^{14} as substrates. Expressions have been derived relating the radio-chemical yields of $C^{14}O_2$ from the three species of isotopic lactate to those from the two species of isotopic glucose. These equations permit the estimation of the maximal contribution of the Embden-Meyerhof glycolytic pathway to the over-all conversion of glucose to carbon dioxide. In the intact animal as well as in diaphragm sections no evidence was found supporting the occurrence of a non-glycolytic pathway. Granted the assumptions implicit in the equations employed, essentially all of the carbon dioxide derived from glucose could be accounted for as arising via glycolysis. In kidney, and more strikingly in liver slices, the data were consistent with the occurrence of a non-glycolytic pathway wherein carbon 1 of glucose was preferentially converted to carbon dioxide. In liver this pathway accounted for at least 75% of the carbon dioxide formed from glucose.

Beryllium.

I. FELDMAN *et alii* (*Arch. Biochem.*, October, 1953) have reported that dialysis studies of beryllium added to plasma, serum and aqueous solutions show the transport of this ion to be determined principally by inorganic phosphate and citrate anions. Significant interaction between beryllium and protein could be demonstrated only with carrier-free Be^7, but polyphosphate compounds, including pentose nucleic acid, formed slightly dissociated complexes.

British Medical Association News.

ANNUAL MEETING.

THE annual meeting of the New South Wales Branch of the British Medical Association was held at the Robert H. Todd Assembly Hall, British Medical Association House, 135 Macquarie Street, Sydney, on March 25, 1954, DR. ANGUS J. MURRAY, the President, in the chair.

ANNUAL REPORT OF COUNCIL.

The Annual Report of the Council was received on the motion of Dr. H. R. R. Grieve, seconded by Dr. Edgar Thomson. After the report had been shortly commented on by the President, it was adopted on the motion of Dr. H. R. R. Grieve, seconded by Dr. H. H. Willis. The report is as follows:

The Council presents the following report on the work of the Branch for the year ended March 25, 1954.

Membership.

The membership of the Branch is now 3695, as against 3574 at the date of the last report. The additions have included 263 elections, reelections and resumptions, and 53 removals into the area of the Branch; while the losses have included 20 by resignation, 125 removals out of the area of the Branch, 18 by default in payment of subscription, and 32 by death. The losses by death were as follows: Dr. N. C. Cunningham, Dr. D. J. M. Adams, Dr. N. N. Franklin, Dr. G. S. Gurney, Dr. F. A. Maguire, D.S.O., C.M.G., Dr. E. J. Day, Dr. D. W. Kilgour, Dr. D. T. Harbison, Dr. A. G. Brydon, Dr. D. H. Lewis, Dr. R. W. L. Schuette, Dr. E. T. Brennan, D.S.O., M.C., Dr. R. J. Nixon, Dr. H. J. Ritchie, Dr. L. A. Gardiner, Dr. J. L. Kelly, Dr. F. E. Barclay, Dr. H. C. Worch, Dr. A. T. Nisbet, Dr. W. L. Nickson, Dr. F. M. Blackwood, Dr. G. C. Harper, Dr. J. H. W. Leadley, Dr. F. H. Sabiel, Dr. R. J. N. Whiteman, Dr. P. L. A. O'Halloran, Dr. A. W. Raymond, M.C. and Bar, Dr. E. H. M. Stephen, Dr. W. F. Matthews, Dr. D. S. Foy, Dr. J. Blank, Dr. R. Kantor.

Obituary: Edgar Horatio Milner Stephen.

In the death of Dr. Edgar H. M. Stephen, the profession has suffered a great loss. A member of Council from 1932 to 1941, he was President of the Branch during the year 1936-1937. The deep sympathy of the Branch is extended to his family.

Meetings.

Ten ordinary general meetings of the Branch (including the annual general meeting), three extraordinary general meetings of the Branch, and ten clinical meetings were held; the average attendance was 74.

Nine ordinary general meetings were held in conjunction with meetings of the special groups, namely: April 30, with the Section of Medicine and the Dermatological Association of Australia (B.M.A.); May 15, with the Oto-Rhino-Laryngological Society of New South Wales, and the Section of Neurology, Psychiatry and Neurosurgery; June 25, with the Section of Pathology and the Section of Pædiatrics; July 30, with the Orthopædic Group (B.M.A.) and the Section of Pædiatrics; August 27, with the Section of Medicine and the Section of Occupational Medicine; September 24, with the Section of Anæsthesia and the Section of Surgery; October 24, with the Section of Pathology, the Section of Medicine, the Section of Pædiatrics and the Section of Urology; November 26, with the Section of Obstetrics and Gynæcology and the Section of Neurology, Psychiatry and Neurosurgery; December 10, with the Section of Medicine and the Section of Neurology, Psychiatry and Neurosurgery. Twenty papers were presented at these meetings.

The clinical meetings were held at the Rachel Forster Hospital for Women and Children, Royal North Shore Hospital, Royal Prince Alfred Hospital, Royal Alexandra Hospital for Children, Saint Vincent's Hospital, Lewisham Hospital, Sydney Hospital, The Women's Hospital, Crown Street, Broughton Hall Psychiatric Clinic and Saint George Hospital.

At the extraordinary general meeting held on April 17, addresses were given by Mr. W. McNary, Chief Executive Officer, Blue Cross Association, U.S.A., and Mr. E. A. Van Steenwyk, Public Relations Officer, Blue Cross Association, and Chief Executive Officer, Associated Philadelphia Hospital Service, U.S.A., who had been invited to Australia by the Commonwealth Government to advise it in relation to the Government's Medical Benefits Scheme. Their addresses were on the activities of the Blue Cross and the Blue Shield in the United States of America.

Consideration was given to a recommendation of the Council on the National Health Service Medical Benefits Scheme at the extraordinary general meeting held on May 15.

At the extraordinary general meeting held on October 29, Dr. Malcolm T. MacEachern, Director of Professional Relations, American Hospital Association, Professor of Hospital Administration and Director of Program in Hospital Administration, Northwestern University, U.S.A., addressed the meeting on "Future Trends and Development of Hospitals".

The second Branch meeting in a country town was held at Goulburn on Saturday and Sunday, October 24 and 25, 1953. The meeting was very successful, 36 members being present and four papers being read. The Section of Pathology, the Section of Medicine, the Section of Pædiatrics and the Section of Urology combined in the presentation of the papers. In addition to a scientific programme, social functions and sporting events were arranged by the Central Southern Medical Association. The Council extends its grateful thanks to the Central Southern Medical Association for its assistance in the organization of the meeting.

At the ordinary general meeting on July 30, the subject being "The Early Treatment of Paralytic Poliomyelitis", physiotherapists were present by special invitation.

An invitation was extended to the fifth and sixth year medical students of the University of Sydney to attend ordinary general meetings, and to sixth year medical students to attend clinical meetings of the Branch.

Representatives.

The Branch was represented as follows:

1. Council of the British Medical Association (1953-1955): Dr. Isaac Jones.
2. Representative Body of the British Medical Association (1953-1954): Dr. E. A. Tivey.
3. Annual Meeting, British Medical Association, Cardiff, 1953: Delegate, Dr. E. A. Tivey.
4. Federal Council of the British Medical Association in Australia: Dr. A. J. Collins, D.S.O., M.C., Dr. W. F. Simmons, Dr. H. R. R. Grieve, Dr. A. J. Murray, O.B.E.
5. Australasian Medical Publishing Company, Limited: Dr. W. F. Simmons, Dr. W. L. Calov, Professor L. F. Dods, M.V.O.
6. New South Wales Post-Graduate Committee in Medicine: Dr. A. C. Thomas, Dr. E. F. Thomson.
7. The Ophthalmic Association, Limited: Dr. E. V. Waddy Pockley.
8. The Flying Doctor Service of Australia: Representative, Dr. George Bell, O.B.E.; Deputy Representative: Dr. J. G. Hunter.
9. Council of the Bush Nursing Association: Dr. A. J. Murray, O.B.E.
10. Hospitals Contribution Fund of New South Wales: Dr. Hugh Hunter.
11. St. John Ambulance Association: Dr. A. J. Murray, O.B.E.
12. Standards Association of Australia: (i) Institutional Supplies Committee, Dr. S. W. G. Ratcliff; (ii) Sectional Committee on Interior Illumination of Buildings, Dr. J. Davis; (iii) Committee on Standards of Laboratory Glassware and Volumetric Glassware, Dr. F. S. Hansman; (iv) New South Wales Committee on Protective Occupational Clothing, Dr. W. T. Nelson; (v) Paint and Varnish Sub-Committee No. 8, Dr. W. T. Nelson; (vi) New South Wales Committee on Eye Protection, Dr. J. Davis; (vii) Sectional Committee on Measuring Cups and Spoons, Dr. W. W. Ingram.
13. Medical Officers' Relief Fund (Federal): Local Committee of Management for New South Wales, Dr. E. H. M. Stephen, Dr. A. J. Murray, O.B.E., Dr. A. J. Collins, D.S.O., M.C.
14. Medical Appointments Advisory Committee (Hospitals Commission of New South Wales): Dr. B. T. Edye.
15. Special Departmental Committee for the Investigation of Maternal Deaths: Dr. E. A. Tivey.
16. Recreation and Leadership Movement: Professor Harvey Sutton.
17. Council of the Royal Society for the Welfare of Mothers and Babies: Sir Robert Wade, Dr. E. H. M. Stephen.
18. New South Wales Medical Board: Dr. J. R. Ryan.

19. Council of the New South Wales Institute of Hospital Almoners: Dr. R. A. R. Green.
20. New South Wales Examining Council for Medical Technology (Hospitals Commission of New South Wales): Dr. E. F. Thomson, Dr. F. S. Hansman.
21. Medical Finance Limited, Board of Directors: Dr. E. A. Tivey, Dr. A. C. Thomsa, Dr. George Bell, O.B.E., Dr. G. C. Halliday.
22. Council of the New South Wales Institute of Dietitians: Dr. K. S. Harrison.
23. Coordinating Council of the Physically Handicapped: Dr. R. A. R. Green.
24. Road Safety Council of New South Wales: Dr. A. J. Murray, O.B.E. Committee to examine and report on matters dealing with road accidents involving motor cycles: Dr. I. D. Miller.
25. Federal Medical War Relief Fund, Local Committee of Management: Dr. A. J. Collins, D.S.O., M.C., Dr. A. C. Thomas, Dr. A. J. Murray, O.B.E.
26. Florence Nightingale Memorial Committee of Australia: Dr. B. T. Edye.
27. National Association for the Prevention of Tuberculosis in Australia (New South Wales Division): Dr. W. Cotter B. Harvey.
28. The Committee for Placement of Resident Medical Officers: Dr. G. F. Elliott.
29. Australian Physiotherapy Association: Dr. B. G. Wade.
30. The Cavalcade of Nursing Committee: Dr. H. R. R. Grieve.
31. New South Wales State Cancer Committee and Cancer Advisory Committee: Dr. B. T. Edye.
32. Council of the Pædiatric Association, Limited: Dr. G. L. Howe.
33. Department of Motor Transport Committee to consider the question of the adoption of chemical tests of body fluids to determine whether a driver is under the influence of alcohol: Dr. F. S. Hansman.
34. Chiropody Board of New South Wales: Dr. A. J. Murray, O.B.E., Dr. S. H. Scougall, Dr. R. F. A. Becke.
35. Medico-Pharmaceutical Liaison Committee: Dr. J. K. Maddox, Dr. G. L. Howe, Dr. W. F. Simmons, Dr. J. G. Hunter.
36. Department of Public Health, Poisons Advisory Committee: Dr. A. W. Morrow, D.S.O.
37. National Health Service, Pensioner Medical Service, Committee of Inquiry: Dr. M. S. Alexander, O.B.E., Dr. B. A. Cook, Dr. A. W. Morrow, D.S.O., Dr. A. C. Thomas.
38. The Australian and New Zealand Association for the Advancement of Science (Thirtieth Meeting): Dr. E. F. Thomson, Dr. Ethel B. Durie.

Council.

(*a*) The attendance of members of the Council and of the standing committees was set out in the accompanying table.

(*b*) The representatives of the Local Associations of members appointed on the invitation of the Council to attend the regular quarterly meetings of the Council were as follows: Dr. W. McP. Roberts (Blue Mountains), Dr. M. M. Ramsden (Border), Dr. J. A. Paul (Brisbane Water District), Dr. L. Abramovich (Canterbury-Bankstown), Dr. L. N. Ferrari (Central Northern), Dr. G. N. M. Aitkens (Central Western), Dr. A. McNeil (Eastern District), Dr. J. R. Sands (Eastern Suburbs), Dr. W. P. H. Dakin (Far South Coast and Tablelands), Dr. W. A. Conolly (Hunter Valley), Dr. G. W. Ashby (Illawarra Suburbs), Dr. N. F. Babbage (Kuring-gai District), Dr. K. J. B. Davis (Northern District), Dr. J. R. Ryan (North Eastern), Dr. A. M. Harper (South Eastern), Dr. C. H. Jaede (South Sydney), Dr. C. R. B. Richards (Warringah District), Dr. S. Lackey (Western Suburbs).

Library.

Dr. A. M. McIntosh was appointed to the position of Honorary Librarian.

Visitors to the library	7204
Books lent to members	1493
Journals lent to members	4879
Books added to the library	158
Journals added to the library	14

The increase in the use of the library facilities is still being maintained, as is evidenced by the above figures which all exceed those of the previous year, 1952-1953.

A further encouraging feature of the twelve months under review is the number of donations of material which have been made to the library files by various members. In some instances where the periodical literature donated duplicated the library's holdings, details of these volumes or issues were added to a list entitled "Duplicates Available for Dis-

ATTENDANCE AT COUNCIL AND STANDING COMMITTEE MEETINGS.

	Council.	Committees.				
		Executive and Finance.	Organization and Science.	Medical Politics.	Hospitals.	Ethics.
ALEXANDER, M. S.	10	—	—	10	—	—
ANDERSON, PHYLLIS M.[1]	2	—	—	—	—	—
BELL, GEORGE. Honorary Treasurer	8	11	4	8	4	5
BLACKBURN, SIR CHARLES	8	—	—	—	—	5
COLLINS, A. J. Vice-President	9	—	—	—	—	1
COOK, B. A.	7	—	—	5	—	—
DOWLING, J. M.[2]	—	—	—	—	—	—
EDYE, B. T.	7	—	—	—	—	3
ELLIOTT, G. F.	8	—	—	—	6	—
GRIEVE, H. R. R. Honorary Secretary	9	9	2	9	2	3
HALLIDAY, G. C.	5	—	—	—	—	2
JOHNSON, A. S.	8	7	6	—	—	—
JONES, K. S.	9	—	—	9	—	—
MACDONALD, R. H. Past President	9	11	—	—	—	—
MORROW, A. W.	5	—	3	—	3	—
MURRAY, A. J. President	10	12	4	10	5	5
NELSON, T. Y. President-Elect	8	11	6	11	6	4
RAWLE, K. C. T.	7	—	—	—	5	—
SIMMONS, W. F.	10	10	—	12	—	—
SOLLING, P. P. M.	7	—	—	8	—	—
STUCKEY, E. S.	9	—	—	12	—	—
THOMAS, A. C.	8	9	—	—	—	2
THOMSON, E. F.	10	8	6	—	—	—
TURNBULL, H. I.	8	—	—	—	3	—
WILLIS, H. H.	10	—	—	11	5	—
TAYLOR, HELEN M.[3]	7	—	4	—	—	—
LITTLE, J. P.[4]	4	—	—	7	—	—
Meetings held	10	12	6	12	6	5

[1] Resigned April 22, 1953.
[2] Resigned April 22, 1953.
[3] *Appointed to Council June 23, 1953, Article 41.*
[4] Appointed to Council June 23, 1953, Article 41.

tribution", which is from time to time forwarded to Branch and allied libraries.

It will be seen from this that rather than members classifying any spare books or journals as "salvage", advice that it will be donated to the library, if required, would be greatly appreciated.

For the benefit of all members, and libraries cooperating in inter-library loans, a photoduplication unit has been established on the library premises. It is therefore now possible to supply photoprints of articles upon request at a charge not exceeding cost.

The Association is pleased to record its grateful thanks for donations received from the following: the Editor, THE MEDICAL JOURNAL OF AUSTRALIA; the estate of the late Dr. D. J. M. Adams; American College of Surgeons; Armed Forces Medical Library, Washington; Dr. Peter Braddon; the British Council; Dr. C. J. Cardamatis; Dr. D. G. Carruthers; Commonwealth National Library; Dr. R. D. Condon; Commonwealth Scientific and Industrial Research Organization, Melbourne; Department of Health, Canberra; Department of Labour and National Service; French Consulate; Dr. W. E. George; Dr. A. R. Hamilton; International Labour Office; Dr. Jean Isbister; the estate of the late Dr. B. G. Johnson; H. K. Lewis and Company, Limited, London; Library of the Medical and Chirurgical Faculty of the State of Maryland; Dr. J. K. Maddox; National Standards Laboratory; Mayo Clinic; Post-Graduate Committee in Medicine, University of Sydney; Queensland Institute of Medical Research; Dr. R. J. Silverton; Stanford University (Lane Medical Library), California; Dr. K. W. Starr; Sydney Technical College; Dr. Sakari Timonen, Helsinki; Dr. P. A. Tomlinson; United Kingdom Information Office; University of Melbourne; Vanderbilt University, Tennessee; Dr. R. J. Walsh; the late Dr. R. J. Whiteman; Watts, Winter and Son; the College of Radiologists (Australia and New Zealand); the Oto-Rhino-Laryngological Society of New South Wales (B.M.A.); the Section of Medicine; and the Dermatological Association of Australia (B.M.A.).

Details of the amount expended on the library for the year ended December 31, 1953, are as follows:

Books	£283	15	4
Subscriptions for journals	752	1	11
Binding	384	12	6
Equipment	107	2	8
	1527	12	5
Salaries	1505	13	6
	£3033	5	11

This amount of £3033/5/11 absorbed 13·9% of the nett subscriptions received.

Affiliated Local Associations of Members.

Blue Mountains (affiliated 1944): *Chairman*, Dr. G. T. Ferris; *Honorary Secretary*, Dr. M. J. Flood. Membership 27. Four meetings were held.

Border (affiliated 1908): *Chairman*, Dr. R. A. Robertson; *Honorary Secretary*, Dr. H. Webber. Membership 16. Four meetings were held.

Brisbane Water District (affiliated 1948): *Chairman*, Dr. H. B. Little; *Honorary Secretary*, Dr. A. B. Paul. Membership 20. Five meetings were held.

Broken Hill (affiliated 1942): *Chairman*, Dr. J. T. Cullen; *Honorary Secretary*, Dr. Franziska Schlink. Membership 17. Fourteen meetings were held.

Canterbury-Bankstown (affiliated 1930): *Chairman*, Dr. C. R. Ratcliff; *Honorary Secretary*, Dr. J. T. St. Ledger Moss. Membership 62. Three meetings were held.

Central Northern (affiliated 1910): *Chairman*, Dr. L. N. Ferrari; *Honorary Secretary*, Dr. H. W. Rundle. Membership 102. Four meetings were held.

Central Southern (affiliated 1909): *Chairman*, Dr. W. N. Newton; *Honorary Secretary*, Dr. J. P. Lyttle.

Central Western (affiliated 1910): *Chairman*, Dr. P. C. P. Waugh; *Honorary Secretary*, Dr. K. S. M. Brown. Membership 71. Three meetings were held.

Eastern District (affiliated 1913): *Chairman*, Dr. F. W. Baylon; *Honorary Secretary*, Dr. A. McNeil. Membership 41. One meeting was held.

Eastern Suburbs (affiliated 1911): *Chairman*, Dr. H. N. Merrington; *Honorary Secretary*, Dr. J. Radford. Membership 141. Four meetings were held.

Far South Coast and Tablelands (affiliated 1935): *Chairman*, Dr. J. McKee; *Honorary Secretary*, Dr. W. P. H. Dakin. Membership 11. Two meetings were held.

Hunter Valley (affiliated 1947): *Chairman*, Dr. R. T. Dalton; *Honorary Secretary*, Dr. D. W. Lawson. Membership 47. Seven meetings were held.

Illawarra Suburbs (affiliated 1913): *Chairman*, Dr. C. Everingham; *Honorary Secretary*, Dr. G. W. Ashby. Membership 113. Four meetings were held.

Kuring-gai District (affiliated 1929): *Chairman*, Dr. C. Warburton; *Honorary Secretary*, Dr. R. C. White. Membership 87. Four meetings were held.

Northern District (affiliated 1911): *Chairman*, Dr. H. R. H. Beattie; *Honorary Secretary*, Dr. H. G. Royle. Membership 67. Three meetings were held.

North Eastern (affiliated 1913): *Chairman*, Dr. G. J. Rawle; *Honorary Secretary*, Dr. N. J. Rogers. Membership 67. Three meetings were held.

Southern District (affiliated 1909): *Chairman*, Dr. H. W. Austin; *Honorary Secretary*, Dr. J. Oliver. Membership 49. Two meetings were held.

South Eastern (affiliated 1941): *Chairman*, Dr. B. A. Cook; *Honorary Secretary*, Dr. M. C. McKinnon. Membership 56. Four meetings were held.

South Sydney (affiliated 1909): *Chairman*, Dr. S. C. Maynard; *Honorary Secretary*, Dr. C. H. Jaede. Membership 45. Three meetings were held.

Warringah District (affiliated 1929): *Chairman*, Dr. M. H. Elliot-Smith; *Honorary Secretary*, Dr. R. T. C. Hughes. Membership 149. Three meetings were held.

Western (affiliated 1908): *Chairman*, Dr. K. H. Broome; *Honorary Secretary*, Dr. S. R. Dawes. Membership 106. Two meetings were held.

Western Suburbs (affiliated 1908): *Chairman*, Dr. M. S. Alexander; *Honorary Secretary*, Dr. L. S. Hughes. Membership 129. Five meetings were held.

Annual Meeting of Delegates.

The fortieth annual meeting of delegates of the affiliated local associations of members with the Council was held on Friday, October 2, 1953.

The delegates present at the meeting were as follows: Blue Mountains, Dr. L. Bamber; Border, Dr. M. M. Ramsden; Broken Hill, Dr. B. H. Vickers; Brisbane Water District, Dr. J. A. Hall; Canterbury-Bankstown, Dr. L. Abramovich; Central Northern, Dr. T. W. Edmeades; Central Southern, Dr. F. L. R. Sharp; Central Western, Dr. G. N. M. Aitkens; Eastern District, Dr. A. McNeil; Eastern Suburbs, Dr. A. D. J. Frost; Far South Coast and Tablelands, Dr. I. H. Mackay; Hunter Valley, Dr. W. A. Conolly; Illawarra Suburbs, Dr. G. W. Ashby; Kuring-gai District, Dr. C. Warburton; Northern District, Dr. R. J. Jackson; North Eastern, Dr. J. L. Roberts; Southern Districts, Dr. P. T. Millard; South Eastern, Dr. J. D. Maude; South Sydney, Dr. C. H. Jaede; Warringah District, Dr. R. G. Bligh; Western, Dr. G. B. Downes; Western Suburbs, Dr. L. S. Hughes.

Special Groups for the Study of Special Branches of Medical Knowledge.

Allergy (inaugurated 1947): *Chairman*, Dr. R. S. Steel; *Honorary Secretary*, Dr. Bernard Riley. Membership 11. Four meetings were held.

Anæsthesia (inaugurated 1934): *Chairman*, Dr. Gwenifer Bernard; *Honorary Secretary*, Dr. R. B. Speirs. Membership 55. Nine meetings were held, one in conjunction with a meeting of the Branch.

Medicine (inaugurated 1924): *Chairman*, Dr. W. E. Fisher; *Honorary Secretary*, Dr. James Isbister. Membership 78. Seven meetings were held, four in conjunction with meetings of the Branch.

Neurology, Psychiatry and Neurosurgery (inaugurated 1924): *Chairman*, Dr. N. E. Kirkwood; *Honorary Secretary*, Dr. J. L. Evans. Membership 100. Ten meetings were held, three in conjunction with meetings of the Branch.

Obstetrics and Gynæcology (inaugurated 1925): *Chairman*, Dr. R. B. C. Stevenson; *Honorary Secretary*, Dr. F. N. Chenhall. Membership 127. Five meetings were held, one in conjunction with a meeting of the Branch.

Occupational Medicine (inaugurated 1952): *Chairman*, Dr. M. R. Finlayson; *Honorary Secretary*, Dr. G. C. Smith. Membership 52. Five meetings were held, one in conjunction with a meeting of the Branch.

Orthopædic Group (British Medical Association) (inaugurated 1923): *Chairman*, Dr. W. D. Sturrock; *Honorary*

Secretary, Dr. A. I. Rhydderch. Membership 22. Five meetings were held, one in conjunction with a meeting of the Branch.

Oto-Rhino-Laryngological Society of New South Wales (inaugurated 1924): *Chairman*, Dr. V. Bulteau; *Honorary Secretary*, Dr. R. G. Mackay. Membership 47. Five meetings were held, one in conjunction with a meeting of the Branch.

Pædiatrics (inaugurated 1924): *Chairman*, Dr. S. E. L. Stening; *Honorary Secretary*, Dr. S. E. J. Robertson. Membership 103. Eleven meetings were held, three in conjunction with meetings of the Branch.

Pathology (inaugurated 1924): *Chairman*, Dr. V. J. McGovern; *Honorary Secretary*, Dr. J. M. Garvan. Membership 89. Seven meetings were held, two in conjunction with meetings of the Branch.

Radiology (inaugurated 1926): *Chairman*, Dr. D. G. Maitland; *Honorary Secretary*, Dr. E. W. Frecker. Membership 87. Six meetings were held.

Surgery (inaugurated 1925): *Chairman*, Dr. A. C. Thomas; *Honorary Secretary*, Dr. J. M. Yeates. Membership 49. Three meetings were held, one in conjunction with a meeting of the Branch.

Urology (inaugurated 1940): *Chairman*, Dr. M. S. S. Earlam; *Honorary Secretary*, Dr. H. G. Cummine. Membership 14. Three meetings were held, one in conjunction with a meeting of the Branch.

Royal Visit.

In presenting the annual report of the Association's activities it is felt that the occasion should not be allowed to pass without reference to the Royal Visit.

On February 3, 1954, history was made, for in the first time in Australia's history a reigning British Monarch set foot on its shores.

Whilst the Royal Visit has been the occasion of celebration and rejoicing it has also given the citizens of this country an opportunity of demonstrating in a most remarkable manner their loyalty to and affection for Her Majesty Queen Elizabeth II.

In keeping with the rest of Sydney, British Medical Association House was decorated for the occasion and was floodlit at night-time.

Australasian Medical Congress (British Medical Association), Ninth Session.

The Australasian Medical Congress, Ninth Session, will be held at the University of Sydney on August 20 to 27, 1955. The Executive Committee of Congress has appointed a number of Committees for the purpose of organizing the Congress.

Federal Council of the British Medical Association in Australia.

The Federal Council of the British Medical Association in Australia met in Adelaide on October 26 to 29, 1953, and in Melbourne on March 15 to 18, 1954. At these meetings the Branch was represented by Dr. A. J. Collins, Dr. H. R. R. Grieve, Dr. W. F. Simmons and Dr. A. J. Murray.

British Medical Association Lectures.

Lectures were arranged as follows:

Eastern District Medical Association, Port Macquarie, April 11, 1953: Dr. J. J. Loewenthal, "Chronic Ulceration of the Leg".

Western Medical Association, Wellington, September 20, 1953: Dr. R. Jeremy, "Some Aspects of Heart Disease in Pregnancy".

Annual Branch Prize for an Essay on a Scientific Subject.

The Council decided that each year it would award a prize of 100 guineas and a bronze medallion for an essay on a scientific subject which must not exceed 12,000 words. No award shall be made if in the opinion of the judges no essay is of sufficient merit.

The subject chosen for the year 1954, the first year of the award, is "The Present-day Pattern of Infectious Diseases".

Overseas Visit by the Medical Secretary.

On May 20, 1953, Dr. J. G. Hunter, Medical Secretary, proceeded overseas in his capacity as General Secretary of the Federal Council of the British Medical Association in Australia.

With Dr. L. R. Mallen he represented the Federal Council at the Seventh General Assembly, World Medical Association, which was held at The Hague on August 31 to September 5, 1953, having previously attended the Council Meeting of the World Medical Association, which was held in British Medical Association House, London, on August 18 to 22, 1953.

Dr. J. G. Hunter also represented the Federal Council at the International Conference on Medical Education held in London on August 22 to 29, 1953. In addition he was present at the annual meting of the American Medical Association at New York, June 1 to 5, 1953, the annual meeting of the Canadian Medical Association at Winnipeg, June 13 to 20, 1953, the annual meeting of the British Medical Association at Cardiff, July 8 to 17, 1953, and the International Medical Librarianship Congress at London, July 20 to 25, 1953.

British Medical Association Overseas Subscriptions.

At the annual meeting of the British Medical Association in July, 1952, the Representative Body decided that the annual rate payable by an overseas member to the Parent Association would be increased from £1. 11s. 6d. to £2. 2s. as from January 1, 1953. However, the Council of the Parent Body decided to add a supplementary grant of 4s. 6d. to the capitation grant of 6s. which it has allowed the Branch in the past in respect of each member, making a total grant of 10s. 6d.

National Health Service—Medical Benefits Scheme.

An extraordinary general meeting of the Branch was held on May 15, 1953, when the following recommendation of Council was adopted by the meeting:

> That a recommendation be made to the Federal Council that it advise the Minister for Health that the profession is prepared to offer its co-operation in the Medical Benefits Scheme as from the date of its commencement, viz, July 1, 1953, on the understanding that its objection to a National Health Scheme which is governed by regulations are to be met by an Act embodying the principles agreed upon by the Minister and the Federal Council and subject to satisfactory assurances in relation to objectionable penalty clauses. In the event of such an Act not being passed within six months the profession reserves the right to reconsider its position.

At an extraordinary general meeting of the Branch held on April 17, 1953, addresses were delivered on the activities of the Blue Cross and the Blue Shield in the United States of America by Mr. W. McNary, Chief Executive Officer, Blue Cross Association, and Mr. E. A. Van Steenwyk, Public Relations Officer, Blue Cross Association, U.S.A., and Chief Executive Officer, Associated Philadelphia Hospital Service, U.S.A., who had been invited by the Commonwealth Government to advise it in relation to the Government's Medical Benefits Scheme.

Hospital Policy.

During the year a great amount of thought was given to the hospital policy of the Association. This was necessitated by the modern trends in hospital practice. The Hospitals Committee was empowered by Council to coopt members of the Association to the Committee for the purpose of considering the matter.

A deputation waited on the Minister for Health for New South Wales in connexion with the classification of patients in public hospitals. It was submitted to the Minister that, having regard to the provision of medical and hospital benefits by the Commonwealth Government, consideration should be given to a satisfactory classification of patients.

Fee Payable to Legally Qualified Medical Practitioners for Services Rendered on Behalf of the Government on Request.

Further representations were made to the Government for an amendment to the regulations governing the fees payable to legally qualified medical practitioners for services rendered on behalf of the Government on request. Whilst satisfactory amendments were made to certain fees, there is still need to amend others. Council has again asked the Department of Public Health to give further consideration to the matter.

Public Medical Officers.

Following representations made by it, the Council received a satisfactory reply from the Public Service Board in connexion with the conditions of service applicable to Senior Medical Officers in the Public Service seeking promotion.

The matter was taken up with the Public Service Board after discussion with the Public Medical Officers' Association of New South Wales.

Committee for Placement of Resident Medical Officers.

The Committee for Placement of Resident Medical Officers was again called upon to function during the year.

All successful candidates of the final degree examination, 1953, who made application received appointments as resident medical officers. Altogether 196 appointments were made.

Department of Medical Sociology and Research.

The work of the department has been mainly in the preparation of broadcast talks, including news commentaries. Information was supplied to assist the Australian Broadcasting Commission and newspapers in their use of material on medical topics.

The talks were given by the spokesman of the Association over the National Stations, in the "Women's Session", and on gerontology and allied subjects in the programme for elderly people. Many articles were prepared for Press use on health and medical subjects.

Golf Tournament.

The annual golf tournament for the British Medical Association Cup presented by Dr. H. C. Rutherford Darling was held on the golf course of the Australian Golf Club at Kensington on Tuesday, November 10, 1953. Dr. F. M. Grace was the winner and Dr. R. G. Bligh the runner-up.

Trophies were presented at the Branch meeting on December 10, 1953.

The British Medical Agency of New South Wales Limited.

The annual general meeting of the British Medical Agency of New South Wales, Limited, was held on October 6, 1953, the report of the directors being presented by the Chairman, Dr. George Bell.

The report showed an improvement in the financial position of the company, inasmuch as the loss of the previous year was converted into a profit.

The directors again look to members to give their support to the agency, which has maintained a service to members of the profession over the years.

Medical Finance Limited.

The annual meeting of Medical Finance, Limited, was held on October 6, 1953. The report of the directors, presented by the Chairman, Dr. George Bell, showed a small profit for the year. The demand for the company's funds still continues to be limited, as under existing conditions loans are available through the banks at lower rates of interest.

Premises Revenue Account.

The Premises Revenue Account discloses a net surplus of £1873 as against a net deficit of £954 for the year ended December 31, 1952, thus showing an increase of £2827 in the net revenue earned. This increase is accounted for by a net

NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

Balance Sheet as at December 31, 1953.

Fixed Liabilities.	£ s. d.	£ s. d.
Debentures:		
51—4% Series "A" at £10 each	510 0 0	
337—4·65% Series "B" at £50 each	16,850 0 0	
208—4·65% Series "C" at £10 each	2,080 0 0	
	19,440 0 0	
Less Amount Unpaid	54 0 0	
	19,386 0 0	
General Reserve Fund (used in the Branch Business)	1,250 0 0	
Australian Mutual Provident Society (secured by Mortgage over Property, British Medical Association House)	24,000 0 0	
		44,636 0 0
Current Liabilities.		
Sundry Creditors	1,603 11 7	
Interest on Accrued Mortgage	85 0 0	
Deposit at Call	700 0 0	
Commercial Banking Company of Sydney Limited—Branch and Premises Current Accounts Net	4,865 16 5	
		7,254 8 0
Other Credit Balances.		
Subscriptions Paid in Advance Suspense Account	49 11 5	
Provision for Taxation	2,143 0 0	
Provision for Painting Building	3,200 0 0	
Provision for Long Service Leave	1,125 0 0	
Superannuation Fund Reserve Account (as per Contra)	1,483 1 9	
		8,000 13 2
Accumulated Funds.		
Balance at December 31, 1952	96,462 3 2	
Add Surplus Year ended December 31, 1953—		
Branch £3,356 5 11		
Premises 1,873 2 9		
	5,229 8 8	
		101,691 11 10
		£161,582 13 0

Fixed Assets.	£ s. d.	£ s. d.
Land and Building, British Medical Association House—at cost *less* depreciation on building	133,248 11 3	
Library—at cost *less* depreciation	6,740 11 3	
Office Furniture and Equipment—at cost *less* depreciation	1,841 5 8	
Debentures in Other Companies—Australasian Medical Publishing Company Limited (Face Value)	7,800 0 0	
Deposit on Debentures—Australasian Medical Publishing Company Limited	123 2 7	
Commonwealth Treasury Bonds (Face Value)	7,000 0 0	
		156,753 10 9
Floating Assets.		
Sundry Debtors (after making provision for Doubtful Debts, Sundry Tenants, Rent *et cetera*)	2,368 14 4	
Cash on Hand	22 16 10	
		2,391 11 2
Other Debit Balances.		
Prepaid Insurances, Rates *et cetera*	954 9 4	
Superannuation Fund — Investment Account (as per Contra)	1,483 1 9	
		2,437 11 1
		£161,582 13 0

Sydney, February 23, 1954.

A. J. MURRAY, President.
GEORGE BELL, Hon. Treasurer.
G. D. ALEXANDER, Accountant.

We have examined the foregoing Balance Sheet with the Books of Account of the New South Wales Branch of the British Medical Association, and, having obtained all the information and explanations we have required, we are of the opinion that such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of our information and the explanations given to us and as shown by the Books of the Company. In our opinion the Register of Members and other records which the Company is required to keep by the New South Wales Companies Act, 1936, or by its Articles, have been properly kept.

Sydney.

F. W. DUNSBURY & Co.,
Chartered Accountants (Aust.).

NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

BRANCH ACCOUNT.

Income and Expenditure Account for the Year Ended December 31, 1953.

	£ s. d.	£ s. d.
To Salaries	8,925 3 1	
„ Rent—Offices, *et cetera*	1,200 0 0	
„ Printing and Stationery	1,439 19 3	
„ Stamps and Telegrams	1,009 13 3	
„ Telephones	294 15 2	
„ Travelling Expenses—General	216 0 3	
„ Code Address	3 3 0	
„ Insurance	14 11 2	
„ Exchange and Bank Charges	12 18 0	
„ Refreshments—Meetings	59 8 7	
„ Newspapers	42 1 4	
„ Sundry Petty Expenses	26 8 0	
„ Tea Money	115 5 9	
„ Federal Council	3,634 1 0	
„ Legal Expenses	127 17 8	
„ Repairs and Maintenance Equipment	56 3 6	
„ Pay Roll Tax	201 16 5	
„ Medical Benefits Fund—Staff	19 17 9	
„ Staff Superannuation Fund	466 9 9	
„ Incidental, Travelling and Entertaining Expenses	324 0 0	
„ Bank Interest	32 15 0	
„ Stamp Duty	33 1 6	
„ Expenses Cricket Match	7 5 0	
„ Donation Royal Netherlands Medical Association	125 10 2	
„ Fares and Cartage	14 16 10	
		18,403 6 10
„ Depreciation—		
Library	579 4 3	
Furniture and Equipment	171 9 4	
		750 13 7
„ Provision for Long Service Leave		800 0 0
„ Balance, being surplus for year ended December 31, 1953, transferred to Accumulated Funds Account		3,356 5 11
		£23,310 6 4

	£ s. d.	£ s. d.
By Subscription Revenue		29,250 16 7
Less Proportion due to—		
British Medical Association	5,728 9 2	
THE MEDICAL JOURNAL OF AUSTRALIA	1,804 13 9	
		7,533 2 11
		21,717 13 8
„ Interest	444 5 8	
„ Rent—Assembly Hall	455 17 0	
„ Broadcasting and Journalist Fees	278 5 0	
„ Accountancy Fees	75 0 0	
„ Refund Expenses, Federal Council	89 5 0	
„ Grant by Federal Council—Miss Rolleston's Overseas Trip	250 0 0	
		1,592 13 8
		£23,310 6 4

increase in income of £3879 and a net increase in expenditure of £1052 as set out in detail on the accompanying comparative statement.

A comparison of percentages of expenditure to rent revenue with those at December 31, 1952, is as follows:

	1952	1953
Percentages of expenses to revenue	104%	93·3%
Percentages of surplus to revenue	—	6·7%
	—	100%

The percentage of rent revenue, expenses and depreciation and the percentage of net deficit for the year to the capital value of the land and building (British Medical Association House) as shown by the books at December 31, 1953, namely £133,249, with the previous year's percentages in parenthesis, are as follows:

Rent revenue (including amount charged for British Medical Association Branch offices, *et cetera*)		20·9%	(17·6%)
Sundry expenses, interest and provision for painting of building	17·3%		(16·25%)
Depreciation of building	2·1%	19·4%	(2·05%)
		1·5%	(·7%)

Financial Statement.

The Council has pleasure in presenting to members the balance sheets and accounts in respect of the financial year which terminated on December 31, 1953.

The net surplus of revenue over expenditure for the year amounted to £5229. 8s. 8d. after making provision for all known expenditure.

The sum of £3569. 15s. 9d. has been written off for depreciation of the building (British Medical Association House), plant, office furniture and equipment and the library.

The sum of £800 has been provided out of the current year's revenue to create a reserve for painting of the exterior of the building and £1125 as a provision for long service leave. These amounts for the time being are used in the business of the Association.

A. J. MURRAY,
President.

The balance sheet of the Branch and the income and expenditure account of the Branch and of the premises were received and adopted on the motion of Dr. George Bell, seconded by Dr. W. F. Simmons.

ELECTION OF OFFICE BEARERS.

Dr. A. J. Murray announced that the following had been elected representatives of the Council for the ensuing year: Dr. M. S. Alexander, Dr. George Bell, Sir Charles Blackburn, Dr. B. T. Edye, Dr. H. R. R. Grieve, Dr. G. C. Halliday, Dr. G. L. Howe, Dr. A. S. Johnson, Dr. R. H. Macdonald, Dr. A. W. Morrow, Dr. K. C. T. Rawle, Dr. W. F. Simmons, Dr. F. T. M. Solling, Dr. E. S. Stuckey, Dr. E. F. Thomson, Dr. H. I. Turnbull.

Elected as Representing Women Members.—Dr. H. M. Taylor.

Elected as Representing the Public (Government) Medical Services.—Dr. H. H. Willis.

Elected as Representing Country Local Associations.—Dr. B. A. Cook, Dr. J. T. Lyttle.

Elected as Representing Metropolitan Local Associations.—Dr. J. E. F. Deakin, Dr. K. S. Jones.

Messrs. F. W. Duesbury and Company were elected auditors for the ensuing year.

ELECTION OF REPRESENTATIVES OF THE BRANCH AT THE ANNUAL REPRESENTATIVE MEETING AND THE ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, 1954, GLASGOW.

On the motion of Dr. E. F. Thomson, seconded by Dr. J. E. F. Deakin, Dr. J. N. Chesterman, Dr. V. J. McGovern and Dr. C. W. S. Dun were appointed representatives of the Branch to attend the annual representative meeting and the annual meeting of the British Medical Association, 1954, to be held at Glasgow on July 1 to 9, 1954. Dr. E. Murray-Will was appointed a deputy representative.

INCOMING PRESIDENT'S ADDRESS.

Dr. T. Y. Nelson delivered his incoming President's address (see page 657). A vote of thanks to Dr. Nelson for his address was carried on the motion of Dr. K. S. Jones, seconded by Dr. G. L. Howe.

INDUCTION OF PRESIDENT.

Dr. A. J. Murray inducted the President for the year 1954-1955, Dr. T. Y. Nelson. Dr. Nelson thanked the members for his election.

SCIENTIFIC.

A MEETING of the South Australian Branch of the British Medical Association was held on October 29, 1953, at the Verco Theatre, Institute of Medical and Veterinary Science, Adelaide, DR. SHOLTO DOUGLAS, the President, in the chair.

Benign Lymphocytic Meningitis.

DR. J. A. R. MILES read a paper entitled "Benign Lymphocytic Meningitis" (see page 659).

DR. JOHN GORDON, in opening the discussion, said that it was refreshing for the clinician to hear about advances made in epidemiology and virology. Since one person was unlikely to see a large number of patients with benign lymphocytic meningitis, and since there were various aetiological possibilities, the precise diagnosis might present difficulties in the individual case. The clinical picture of meningitis with an excess of lymphocytes in the cerebro-spinal fluid might result from a variety of causes ranging from yeasts and spirochætes to tubercle bacilli and viruses. The latter included viruses which were essentially neurotropic, as those of poliomyelitis and lymphocytic choriomeningitis, and others such as mumps and glandular fever viruses, which commonly affected other systems, but which might yet cause the patient to present with lymphocytic meningitis. Dr. Gordon pointed out that from the clinician's viewpoint the early problem of lymphocytic meningitis usually resolved itself into a diagnosis between poliomyelitis, tuberculous meningitis and meningo-encephalitis. The distinction was an important one, as each had its own particular problems of management from the public health, disposal, prognosis and treatment aspects. Further, the diagnosis at first had to be made on the clinical picture and examination of the cerebro-spinal fluid, as special investigations necessarily took some time before isolation of an organism or conclusive agglutination studies were effected. In most cases of tuberculous meningitis there was a history of several weeks or a month or two of anorexia, headache and vomiting, with a characteristic mental apathy, before definite signs of meningeal involvement became apparent. By the time when the patient presented, the results of cerebro-spinal fluid examination were usually sufficiently characteristic to confirm the diagnosis. The pressure was usually raised. On standing for some time the colourless or faintly yellow fluid formed a fine web coagulum. The cell count was usually about 100 per cubic millimetre, nearly all being lymphocytes. The protein level was raised, the chloride content fell to a low figure (usually about 650 milligrammes per 100 millilitres), and the sugar content dropped but sugar did not usually disappear completely. The great fall in chloride content with the persistence of a trace of glucose, together with the cell count, were so characteristic that the diagnosis could be made even though tubercle bacilli were not found.

Dr. Gordon went on to say that the clinical picture of poliomyelitis was well known, but difficulties still arose when the patient was examined in the pre-paralytic stages and when meningeal symptoms were not obvious. Suspicious clinical points were the abrupt onset of fever, headache, malaise and pain in the back and lower limbs, which tended to be more severe and localized than in influenza. Routine neurological examination at that stage might reveal certain minor signs indicative of invasion of the central nervous system, the commonest of which was nystagmus. Examination of the cerebro-spinal fluid at that stage usually revealed a moderately high cell count, whereas the protein level was only slightly raised.

Dr. Gordon said that it was therefore possible as a rule to distinguish between meningitis produced by tuberculosis and that produced by poliomyelitis. There still remained a group of patients suffering from an illness characterized by fairly sudden fever, meningitis, and sterile cerebro-spinal fluid containing an excess of lymphocytes. The prognosis was good, and the condition was loosely called "benign lymphocytic meningitis". It might be caused by several viruses. Dr. Miles had indicated that severe cases might be due to diseases already familiar, such as mumps and infectious mononucleosis; when clinical and laboratory examinations were made in such cases those possibilities should be kept in mind. However, it became extremely important in the management of such a condition to seek the advice of the laboratory, so that suitable virus and serological studies might be made. Only in that way would further advances be made in knowledge of an interesting group of conditions.

DR. A. R. SOUTHWOOD asked Dr. Miles his views on meningism and its relation to lymphocytic chorio-meningitis. By meningism Dr. Southwood was not referring to the set of symptoms—head retraction, opisthotonos, Kernig's sign and the rest—occurring in a great variety of disorders. He was applying the term to the condition described by a French physician some thirty years before Wallgren described lymphocytic choriomeningitis. By "meningism" he meant the condition of cerebro-spinal irritation occurring in association with several infections, such as acute gastro-enteritis and pneumonia, especially in young children. The distinguishing features between meningism and other clinical conditions resembling it were two: meningism showed no cellular increase and no chemical abnormality in the cerebro-spinal fluid. The cerebro-spinal fluid amount and pressure were increased, as is usual in meningeal "reactions". Years earlier, before the special cerebro-spinal fluid changes associated with tuberculous meningitis were generally known, meningism in infants associated with vomiting and other features of gastro-enteritis was sometimes wrongly diagnosed as tuberculous meningitis. The relief of symptoms especially after lumbar puncture surprised and delighted the physician and the parents. Dr. Southwood wondered if cases regarded as meningism might sometimes have really been lymphocytic choriomeningitis, and he asked Dr. Miles for his views on the matter.

Dr. Southwood supported Dr. Gordon in his appreciation of the valuable review presented by Dr. Miles. From the public health standpoint it was important that the diagnosis of cerebro-spinal infections should be as accurate as possible. As a general rule any rational attempts to control spread of infections depended mainly on knowing the precise nature of the illness. It was a difficult field to work in. Controlling the spread of acute infections of the nervous system, especially of troubles due to neurotropic viruses, was likely to remain difficult. However, the sulphonamide drugs had radically altered the outlook on meningococcal infections. Perhaps chemotherapeutic or other methods would gradually be developed to assist in dealing with the problems of the viruses.

Dr. Miles, in reply to questions on lymphocytic chorio-meningitis, said that focal neurological signs occurred in few cases, that a very high cell count in the cerebro-spinal fluid increased the probability that this was the cause, and that a considerable search for these infections had been made in several centres, but that the existence of the disease in Australia had not been altogether excluded.

Dr. Miles also said that laboratory investigations on acutely ill patients could not give a firm diagnosis. Only the isolation of virus, which usually took a considerable time, or the examination of a second specimen of serum taken two or more weeks after the first, could enable the laboratory to give a definite answer. No significant changes in sugar or chloride content occurred in the cerebro-spinal fluid in these conditions and this difference could be very useful in the differentiation of cases of tuberculous meningitis. He had no figures for the number of cases of benign lymphocytic meningitis due to infectious mononucleosis, but was of the impression that few cases of pure meningo-encephalitis without enlargement of glands or spleen were due to this cause. He did not know how "meningism" was caused, but held strongly that its causation was not the same as that of lymphocytic meningitis and was probably not due to invasion of the brain or meninges with the organism causing the precipitating infection.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

THE NATIVES.[1]

THEIR treatment of wounds must not be omitted. A doctor is with them a person of importance and esteem, but his province seems rather to charm away occult diseases than to act the surgeon's part which, as a subordinate science,

[1] From "A Complete Account of the Settlement at Port Jackson", by Watkin Tench (1791). From the original in the Mitchell Library, Sydney.

is exercised indiscriminately. Their excellent habit of body, the effect of drinking water only, speedily treats wounds, without an exterior application, which with us would take weeks or months to close. Their native hardiness of constitution is great. I saw a woman, on the day she was brought to bed, carry her newborn infant from Botany Bay to Port Jackson, a distance of six miles: and afterwards light a fire and dress fish. They are, nevertheless, sadly tormented by a cutaneous eruption: but we never found it contagious. After receiving a contusion, if a part swell, they fasten a ligature very tightly above it so as to stop all circulation. Whether to this application or to their undebauched habit it be attributable I know not, but it is certain that a disabled limb among them is rarely seen: although violent inflammations from bruises, which in us would bring on gangrene, daily happen. If they get burnt, either from rolling into the fire when asleep, or from the flame catching the grass on which they lie (both of which are common accidents), they cover the part with a thin paste of kneaded clay which excludes the air and adheres to the wound, until it be cured and the eschar falls off.

In a very early stage of intercourse several natives were present at the amputation of a leg: when they first penetrated the intention of the operator they were confounded: not believing that such an operation could be performed without loss of life: and they called aloud to him to desist: but when they saw the torrent of blood stopped, the vessels taken up, and the stump dressed, their horror and alarm yielded to astonishment and admiration which they expressed by the loudest tokens.

Special Correspondence.

PARIS LETTER.

By OUR SPECIAL CORRESPONDENT.

THE following is a summary of some recent trends in clinical pathology and therapy as reported in Parisian medical journals.

A New Clinical Aspect of Asthma.

Professor J. Turiaf distinguishes within the general framework of asthma a very peculiar and frequent form—namely, asthma with continual dyspnœa. It begins late in life, only after the age of forty years, and from the very start dyspnœa is continual. On waking, coughing fits and dyspnœa, serious enough to prevent talking and moving, begin immediately until expectoration of viscous material brings transitory relief. Subsequent attacks during the day always begin with a whooping type of cough. The material expectorated is sometimes gelatinoid, sometimes fluid and frothy, and it may reach a volume of 100 to 300 cubic centimetres per day. The patient's general condition is low. He is thin, tired, unfit for work, irritable and pessimistic. The skin is often bronzed or greyish. Very frequently the patient has a history of "asthmatic equivalents", such as eczema, periodic coloenteritis, migraine and blinding headache, vasomotor rhinitis, and repeated attacks of bronchitis. All these troubles are relieved or disappear when the continual dyspnœa begins. Eosinophilia is usually present in the blood and the material expectorated.

Skin tests for allergy either give negative results or reveal a sensitivity to many substances, and in some cases to tuberculin only. On bronchograms there is either shrinking or dilatation of the lobar bronchus and bronchioles. The prognosis is grave; no spontaneous recovery or true and lasting remission occurs. Repeated treatment by adrenaline or ephedrine aggravates the condition. Theophyllin has no effect. Testosterone sometimes gives good results. But recently one drug, cortisone, administered in small doses by mouth, has really transformed the prognosis, and patients are able to work again. At the onset of the disease a stay in the mountains at an altitude of 6000 feet has been beneficial.

Gastric and Duodenal Ulcers.

Dr. R. Gutmann insists on the sharp distinction between gastric and duodenal ulcers as far as treatment and prognosis are concerned. He holds that duodenal ulcer never develops into a cancer, but frequently relapses. Therefore medical treatment must be applied for at least one year or longer. Gutmann advocates 12 injections of histidine hydrochloride every month and a not too strict diet (to avoid deficiency diseases), and forbids smoking only when the stomach is empty.

Surgical treatment is advised only when hæmorrhage occurs repeatedly or when severe pains continue in spite of medical treatment. But Gutmann thinks that gastrectomy is not always indicated. A well performed gastro-enterostomy cures most duodenal ulcers, does not cause more peptic ulcer than a gastrectomy, and certainly causes less complications.

On the contrary, in the case of gastric ulcer, development into cancer is always to be feared. Medical treatment must be energetic. It consists of protein diluted in sodium hyposulphite given every other day in a series of 30 intravenous injections, injections of oxyferriscorbone and, by mouth, the administration of bismuth and belladonna. The administration of all these drugs must be continued until the X-ray abnormalities have disappeared. As long as the X-ray ulcer image exists, danger of cancer also exists. Therefore, if it still shows after energetic medical treatment, surgical treatment is necessary, even though the patient no longer suffers any pain. The operation is, of course, a gastrectomy.

Milk diet, bed rest, and daily intravenous injections of atropine bromide should be used only during hyperalgesic periods and for the shortest possible time. As for the quiet, calm life ordered by psychosomatic theory, Gutmann thinks that it is good for everyone, with gastric ulcers or without them.

Treatment of Syphilis in the Primary and Secondary Stages.

Dr. R. Degos gives the present-day views of French syphilologists. Everybody thinks that penicillin must be used as "attack" or first treatment because of its efficacy, speed of action and low toxicity. Within a period of ten to fifteen days 6,000,000 to 10,000,000 units are injected; but other authors have tried only one dose of 1,000,000 to 3,000,000 units.

There are two different opinions on the treatment to be given after this course of penicillin. Firstly, some syphilologists give no further treatment, but maintain a strict watch over the patient. They require the performance of a Wassermann test—and it must be quantitative—every week during the first two months, every fortnight during the four following months, and every month during the following year. Secondly, other syphilologists think that we are not yet able to judge the effect of penicillin alone. They maintain that only the classical four-year bismuth treatment gives complete security. This bismuth treatment must certainly be given when a patient with syphilis is first treated more than six months after infection, and also when patients are especially dangerous as far as dissemination is concerned. Because of the treponemicidal action of "Terramycin" and even of aureomycin and chloramphenicol, Degos thinks that gonorrhœa and chancroid must be treated with streptomycin only. Thus concomitant syphilis does not risk being overshadowed, masked and ignored.

Correspondence.

PERFORATION OF THE ŒSOPHAGUS AND RUPTURE OF THE AORTA DUE TO A PIECE OF FLY-WIRE.

SIR: Mr. V. Bulteau's letter in your issue of March 13, 1954, recalls to mind the following experiences. J.C., aged thirty-five years, lost a leg at Buna in 1942. On the night of June 7, 1952, armed as it were to the teeth with safety pins, he was assembling his wooden leg. The inevitable happened, and a large open safety pin lodged, open end up, at the junction of lower and middle thirds of the œsophagus. He was admitted to Lewisham Hospital, where œsophagoscopy was carried out under local anæsthesia. The clasp was the only portion of the pin visible. The remainder was embedded in the left lateral œsophageal wall. Attempts at removal merely traumatized the mucous membrane, and caused intense pain. Œsophagoscopy was abandoned, and three hours after admission, thoracotomy was performed. The tip of the pin lay against, but had not penetrated, the wall of the descending aorta. The pin was removed by œsophagotomy. Following this the patient made a rapid

recovery. It is of interest that his subsequent attempts to obtain recompense on the grounds of "attributable to war service" were unsuccessful.

My other transthoracic encounter with an œsophageal foreign body occurred during the drainage of a pyopericardium. Lying free in the oblique sinus was a piece of chop bone. It must surely have ulcerated through from the œsophagus.

The decision to open the chest is fairly easily made when it is known that a foreign body is present. I would say thoracotomy is indicated (i) when the foreign body cannot be removed endoscopically, (ii) when the foreign body cannot be removed endoscopically without undue trauma, (iii) when the foreign body has already ruptured the œsophagus, and (iv) when evidence of œsophageal rupture appears following endoscopic removal. On the other hand when unequivocal history and signs are absent, a foreign body might not be suspected, and the problem then might well elude the wisest clinician. I felt that the valuable case report presented by Dr. Birrell and Dr. Syme fell into this group. The evidence at their disposal hardly permitted an accurate diagnosis.

I agree with Mr. Bulteau that thoracotomy is indicated, but I am far from confident that I shall recognize the problem if such ever comes my way.

Yours, etc.,

189 Macquarie Street, Sydney, April 10, 1954.

HARRY WINDSOR.

THE MODE OF ACTION OF CONVULSIVE TREATMENT.

SIR: While Dr. Bostock and Dr. Phillips must be congratulated on their excellent paper "The Mode of Action of Convulsive Treatment" (M. J. AUSTRALIA, April 3, 1954), I feel that certain aspects of their hypothesis and its presentation are open to criticism. I hope I will be pardoned by the authors for carping at these *seriatim*.

The authors state: "In ordinary behaviour, fatigue of the cerebral mechanism is minimal. Comparatively few neurons are in action at one time." Surely this is a formidable assumption; even granting that the sum total of available neurons is of the order of 10^{20}, we have no direct evidence that the subcortico-cortical neuronal network is capable of lying quiescent (during consciousness) until a pathway is stimulated to action. As J. C. Eccles (1953) has pointed out, the number of neurons activated by a single discharge into the network is probably of the order $N^{\frac{2^n}{n!}} m^n$, approximating 8×10^6 for a system where each neuron has only five synaptic connexions. Eccles adds: "We have the indication that an impulse discharged by any one neurone has in 20 milliseconds contributed directly and indirectly to the excitation of hundreds of thousands of neurones . . . the integration, within a few milliseconds of influences picked up at hundreds of thousands of nodes would be unique, particularly when it is remembered that the integration is no mere addition, but is exerted to modify, in some specific way, 'a shifting harmony of sub-patterns' of neuronal activity." Such a view is scarcely compatible with the analogy of a "multiplicity of railway routes" with their fixed spatio-temporal boundaries.

The authors' concept of neuronal "fatigue", as a state which can be correlated directly with overwork, worry *et cetera*, is scarcely consistent with the assumption that the greater percentage of the neuronal net is quiescent. Abnormal, psychoneurotic or psychotic behaviour does not imply a vastly augmented demand on neuronal pathways (except in more radical cybernetic quarters), and with cerebral chronaxies and conduction times of milliseconds, surely the load per unit time can have little to do with neuronal "efficiency".

In discussing the mode of action of convulsive therapies the authors make no distinction between the modalities involved. If this is so, one must assume that the convulsive seizure, which is the only common factor in electroconvulsive treatment, photo-convulsive and audio-convulsive therapies, ammonium chloride, "Metrazol" and phenylmethylaminopropane-induced convulsions, is the only therapeutic factor involved. They ignore the physical variables such as waveform, frequency *et cetera*, which have been shown by Strauss and Macphail (1952), Liberson (1945), Wilcox (1944, 1954) and others to exert considerable influence on the therapeutic result. They add: "It is not surprising that convulsive therapy, which acts on cortical cells and produces changes in emotional tone, can cause the disappearance of psychosomatic symptoms." The majority of investigators, including Lorimer (1949), Roth (1951), Ashby (1949) and Heath and Norman (1946), consider that the locus of electro-convulsive treatment action is in the diencephalic nuclei and in the reticular activating system. Lorimer's experiments, though performed on cadavers, would certainly indicate that the bulk of the current is routed through these structures, with much cortical sparing.

Finally, I am constrained to query that the patient's "constant preoccupation with his symptoms—that is, hallucinations, delusions, psychosomatic symptoms *et cetera*—interferes with normal thinking." Preoccupation certainly does interfere with environmental and experiential influences, but is this the reason for the patient's "abnormal" thinking? If this is so, we must assume a positive regenerative feedback mechanism. Could it not be that this is purely a post-hoc phenomenon, determined by basic disturbances within the network?

Yours, etc.,

"Gate Lodge", Callan Park, New South Wales. April 8, 1954.

HARRY R. BAILEY.

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WILCOX, P. H. (1944), "The Electroshock Convulsion Syndrome", *Am. J. Psychiat.*, 100: 668; (1954), personal communication.

SIR: I read with interest the essay "The Mode of Action of Convulsive Treatment" by Professor John Bostock and Dr. Bertram J. Phillips (M. J. AUSTRALIA, April 3, 1954). May I use your column to add a warning?

There has been a steady stream of books and articles purporting to explain the action of electro-convulsive treatment, in which philosophy masquerades as anatomy and physiology. These articles abound in such expressions as "the disruption of abnormal engrams" and "neuronal fatigue". The hypotheses involved are still hypotheses, requiring to be checked by experiment and observation. They are not essentially superior to, say, Descartes's "animal spirits" hypothesis, which, for those who found it useful, served its purpose until a better one came along. The danger is that the volume and insistence of the modern "philosophical" neurology has led some psychiatrists to suppose that neurology has achieved a body of fact which it has not. The only good effect of this is to make the rest of the medical profession impatient of the psychiatrists concerned.

Another important point is suggested by the essay, in which the authors do not seem particularly perturbed by the side effects of electro-convulsive treatment. Why is it that many general practitioners, who have to care for our patients afterwards, insist that the side effects of electro-convulsive treatment are often prominent, disabling and worthy of further attention in themselves, while the loudest voice claiming that the side effects are minimal (or paradoxically "valuable" and "desirable") is that of the psychiatrists? (The present authors do not mention as a complication the precipitatable anxiety which has been validated recently by the painstaking experiments of Funkenstein, Greenblatt and Solomon.) I cannot believe that general

practitioners are all "prejudiced" and "ignorant", and feel that many psychiatrists may have developed a certain mental set about electro-convulsive treatment. Those whose job it is to dispense electro-convulsive treatment might do well to examine their own feelings, images and chance remarks on the subject, hoping to gain insight into the way they use this powerful but—let us face it—crude treatment.

I am sure Dr. A. S. Ellis, of Mont Park, will not mind my quoting an apposite remark made when he visited Enfield last year: "We are using a sledgehammer to crack a nut"—verily a *double entendre* of "sledge hammers" and "nuts", which repays urgent study.

Yours, etc.,

Enfield Receiving House, Adelaide, April 10, 1954.

J. E. CAWTS.

THE PROBLEM OF THE UNDESCENDED TESTICLE.

SIR: I should like to take the opportunity of commenting on the interesting contribution from Mr. Murray Clarke on "The Problem of the Undescended Testicle". As he points out, it is important to clearly differentiate the retractile testicle, which requires no treatment other than reassurance to the parents that descent will occur naturally at or before puberty and a firm warning to avoid hormone treatment. The differentiation between ectopic and arrested testes is not always easy, but is of no great moment if operative treatment is deferred until after the ninth year in all cases, unless some complication forces our hand earlier. Many large series of cases have shown conclusively that the incidence of neoplasm is more than thirty times as great in undescended testes and, although orchidopexy does not reduce this risk, it places the testis where any pathological change can be most easily detected. It is a surgical crime to replace a testis in the abdomen should the cord be too short to allow it to be brought down.

Atrophy of the testis may be caused by gross underdevelopment of the organ, by damage to the blood supply at operation or by thrombosis of the cord from excessive traction. The smallest of testes will often develop in a most gratifying manner after a properly performed orchidopexy, and the other causes are entirely preventible. Therefore a small testis on one side is an even stronger argument for a competently performed orchidopexy than is the presence of one normal gonad.

When performing orchidopexy certain principles must be borne in mind. An adequate cord dissection must be done to provide a cord of satisfactory length, a hernial sac is very commonly present and must always be looked for and dealt with, and the testis must be retained in the scrotum without undue traction on the cord. Both sides should never be operated on at the one time. All these criteria are most adequately fulfilled by the procedure originally described by Ombrédanne in which the testis is passed through the scrotal septum into the opposite scrotal sac. This operation is both easier and quicker than the Torek procedure, which is rightly being discarded in most centres; it requires only one stage, it exercises only gentle traction on the cord, and, with a short cord, it is the only practicable procedure, since the scrotal septum can always be brought up to the cord and will slowly lengthen it without any risk of thrombosis.

Yours, etc.,

435 Marrickville Road, Dulwich Hill, New South Wales. April 19, 1954.

DOUGLAS H. COHEN.

Obituary.

THOMAS GARNET STIRLING LEARY.

PROFESSOR W. A. OSBORNE writes: It is difficult to think that the buoyant personality of Garnet Leary is no more, for to a large body of colleagues, athletes and grateful patients he was something more than a medical practitioner, high though this calling be. It was my privilege several times to note his success in the treatment of stammering, a disability of which he himself was once a pathetic example. No doubt the standard methods he employed were in part responsible for his successes, but I venture to think that the main element in his treatment was the impact of a dominant personality. The departments of pathology in which faith-healing can be effective are few, but this is one of them. An Ulsterman, with steadfast loyalty to the throne and empire and opposing strongly the application of ecclesiastical machinery to secular and especially political ends, he was nevertheless sympathetic towards Irishmen and appreciative of their good points. Possibly some Irish blood, as the name suggests, helped him in this. I can never forget one occasion in which he gave me a lift to a function in the University grounds. He was driving into an enclosure not reserved for parking when a huge policeman came up: "Fwhat are ye doin'? Can't ye see? Park over there and not here." Leary replied at once in his well-known manner: "Look at that now! Here I am disobeying regulations. But out of evil good may come; if I hadn't driven in here I shouldn't have met such a splendid specimen of manhood as you are. My name's Leary and God save Ireland." The policeman's face broke into a broad smile: "Get along wid ye now." Garnet Leary was a kind-hearted and generous friend and a superb host.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 20, of April 1, 1954.

AUSTRALIAN MILITARY FORCES.

Australian Regular Army.

Royal Australian Army Medical Corps.

The following officers are transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (2nd Military District), 31st January, 1954:

Captains 2/40144 B. S. Clifton, 2/40148 E. J. Lines, and 2/40149 D. H. Trousdale.

The Short Service Commission granted to 1/8054 Captain C. F. Greenslade is extended to 10th February, 1954.

1/8054 Captain C. F. Greenslade is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (1st Military District), 11th February, 1954.—(Ex. Min. No. 31—Approved 26th March, 1954.)

Citizen Military Forces.

Northern Command: First Military District.

Royal Australian Army Medical Corps (Medical).—The provisional ranks of the following officers are confirmed: Captains 1/46756 G. Borzi and 1/39155 B. H. Gutteridge.

1/46756 Captain G. Borzi is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (1st Military District), 3rd February, 1954.

Eastern Command: Second Military District.

Royal Australian Army Medical Corps (Medical).—The provisional rank of 2/146595 Captain A. W. T. Edwards is confirmed. 2/127046 Honorary Captain R. K. Reid is appointed from the Reserve of Officers, and to be Captain (provisionally), 15th January, 1954. 2/146595 Captain A. W. T. Edwards is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (2nd Military District), 15th December, 1953. 2/56841 Captain (provisionally) S. L. Mayne relinquishes the provisional rank of Captain and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (2nd Military District) in the honorary rank of Captain, 13th January, 1954. To be Captain (provisionally), 15th February, 1954: 2/127047 Evan McKay Thomson.

Southern Command: Third Military District.

Royal Australian Army Medical Corps (Medical).—To be Lieutenant-Colonel and Temporary Colonel, 6th January, 1954: 3/50203 Edgar Samuel John King, and is appointed Assistant Director-General of Medical Services (Consultant Pathologist), Army Headquarters. The provisional rank of 3/101011 Captain C. W. E. Wilson is confirmed. 3/152003 Captain (provisionally) N. B. Le Couteur relinquishes the provisional rank of Captain and is transferred to the Reserve

of Officers (Royal Australian Army Medical Corps (Medical)) (3rd Military District) in the honorary rank of Captain, 1st January, 1954.

Tasmanian Command: Sixth Military District.

Royal Australian Army Medical Corps (Medical).—6/15408 Captain J. N. Taylor is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (3rd Military District), 24th December, 1953. 6/15263 Honorary Captain D. E. Anderson is appointed from the Reserve of Officers, and to be Captain (provisionally), 15th January, 1954.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps.

1st Military District.—To be Honorary Captain, 1st February, 1954: Samuel John Howes. The following officers are retired, 4th January, 1954: Honorary Captains W. A. A. Mackey, D. C. McSweeney and C. G. Williams.

2nd Military District.—To be Honorary Captain, 25th January, 1954: Alastair Geoffrey Grindrod Robson. The following officers are retired, 12th January, 1954: Honorary Captains H. M. Bourke, R. K. Burnett, S. L. Cameron, N. S. Mulhearne and R. K. Stockbridge.

3rd Military District.—To be Honorary Captains: Hadyn Pryce Smith, 2nd January, 1954, and Edgar John Hamilton North, 5th January, 1954. Lieutenant-Colonel J. H. Body, E.D., is placed upon the Retired List (3rd Military District) in the honorary rank of Colonel and with permission to wear the prescribed uniform, 3rd February, 1954. The following officers are retired, 3rd February, 1954: Honorary Captains E. V. Anderson, A. B. Corkill, H. J. P. Ham, S. B. Hudson, E. Kirsner, N. H. Luth, G. G. H. Murdoch, W. E. MacMillan, D. M. Seeley and M. B. Wanliss.

4th Military District.—The following officers are retired, 16th February, 1954: Honorary Captains G. D. Harris and F. B. Leditschke.

5th Military District.—The following officers are retired, 12th January, 1954: Honorary Captains A. G. Abbott, A. M. A. Clark and A. Walters.

6th Military District.—Honorary Major J. H. B. Walch is retired, 12th January, 1954.

The following officers are placed upon the Retired List within Military Districts and on the dates as shown, with permission to retain their rank and wear the prescribed uniform:

1st Military District.—Lieutenant (Honorary Captain) B. Atkinson and Lieutenant J. C. Radley, 4th January, 1954.

2nd Military District.—Lieutenant-Colonels C. R. Cole, W. Freeborn, M.M., M. P. Susman, J. H. Thorp, Majors T. W. Burgess, R. C. Geeves, W. Pook, Captain (Honorary Major) K. Klein, Captains C. E. Brake, C. W. Coombe, C. C. O. Deutcher and P. H. Outridge, 12th January, 1954.

3rd Military District.—Majors C. E. Cook, D. L. G. Thomas, Captain (Honorary Major) J. H. Kelly, Captains C. C. Klug, J. L. W. Sharland, K. D. Fairley, and Lieutenant A. F. Crowley, 3rd February, 1954.

4th Military District.—Lieutenant-Colonels E. F. Gartrell, T. A. B. Jones, Major M. Schneider and Captains W. F. Joynt and G. A. Watson, 16th February, 1954.

5th Military District.—Captains C. M. Greer, A. L. Johnston and M. A. Radcliffe-Taylor, 12th January, 1954.

Retired List.

3rd Military District.—The name of Lieutenant-Colonel E. S. J. King is removed from the Retired List on appointment to the Citizen Military Forces, Royal Australian Army Medical Corps (Medical), 3rd Military District, 5th January, 1954.—(Ex. Min. No. 38—Approved 26th March, 1954.)

ROYAL AUSTRALIAN AIR FORCE.

Air Force Reserve: Medical Branch.

The following former officers are appointed to commissions with the rank of Flight Lieutenant: J. L. Struan-Marshall (035910), 11th November, 1953, G. W. Briggs (430642), 12th January, 1954.

The following are appointed to commissions with the rank of Flight Lieutenant: William Lindsay Elrick (257904), Francis Xavier Connell (257903), 10th September, 1953, Daryl Phillip Thompson (450074), 16th September, 1953.

The provisional appointment of the following Pilot Officers is confirmed and they are promoted to the rank of Flight Lieutenant, 11th December, 1953: M. F. Savill (015166), G. Buchanan (015152), J. L. Colvin (015162).

Public Health.

THE following notice has been promulgated in the *Queensland Government Gazette*, Number 81, of April 10, 1954:

Department of Health and Home Affairs,
Brisbane,
8th April, 1954.

His Excellency the Governor, with the advice of the Executive Council, and in pursuance of the provisions of *"The Cremation Acts, 1913 to 1935"*, has directed that the licence issued to

ROBERT FRANCIS O'SHEA, M.B., B.S. (Univ. Qld.), a legally qualified medical practitioner, authorising him to sign permissions and certificates for cremation and to grant permission to cremate any human body after death,

be cancelled.

W. M. MOORE.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Course in Advanced Medicine.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that a course in adanced medicine suitable for candidates for the examination for membership of The Royal Australasian College of Physicians will be held for a period of eleven weeks, commencing June 7, 1954. Fee for attendance will be £31 10s. The programme has been arranged to take place in the afternoons from Monday to Friday and on Saturday mornings.

It is desirable that candidates should have had considerable experience in clinical work either in hospital or medical practice before considering themselves prepared to take examinations for higher medical degrees or diplomas. The course will also be found of value to practitioners intending to devote further time to acquiring such experience before taking the examination and to those not seeking higher qualifications but who are anxious to widen their knowledge of internal medicine. The scope of the course includes the following: special instruction in electrocardiography; ward rounds and demonstrations of cases at the principal metropolitan hospitals; regular clinico-pathological conferences; lecture demonstrations in pathology, hæmatology and biochemistry; demonstrations of the application of radiological methods of diagnosis to medical diseases; tutorials in case-taking; demonstrations and lectures in psychiatry; demonstrations of neurological cases and electroencephalography.

The supervisor of the course will conduct tutorials on selected subjects and will be available to discuss with students any problems arising in the course. It is expected that students will devote considerable time to reading of text-books and current medical literature.

Fees are payable in advance at enrolment date, and early application is desirable. Applications to attend the whole or part of the course should be addressed to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 5238, BW 7483.

Week-End Course at Bathurst.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a week-end course will be held at the Bathurst Town Hall, in conjunction with the Western District Medical Association, on Saturday and Sunday, May 8 and 9, 1954. The programme is as follows: Saturday, May 8: 2.30 p.m., "Backache", Dr. Eric A. Hedberg; 4 p.m., "Chest Trauma", Dr. Harry M. Windsor. Sunday, May 9: 10 a.m., "Some Common Diseases of Bone", Dr. C. R. Bickerton Blackburn; 11.30 a.m., "Cardiac Arrest in the Theatre and Other Aspects of Cardio-Vascular Surgery", Dr. Harry M. Windsor; 2 p.m., "Electrolyte and Fluid Balance", Dr. C. R. Bickerton Blackburn; 3 p.m., "Traumatic Injuries: Surgical Aspect", Dr. Eric A. Hedberg. The fee for attendance is £3 3s. Those wishing to attend are requested to notify Dr. Brooke Moore, 142 William Street, Bathurst, as soon as possible.

SEMINARS AT ROYAL PRINCE ALFRED HOSPITAL.

ADVICE has been received of the cancellation of the seminar set down to be held at the Royal Prince Alfred Hospital, Camperdown, New South Wales, on May 28, 1954.

Australian Medical Board Proceedings.

QUEENSLAND.

THE following have been registered, pursuant to the provisions of *The Medical Acts*, 1939-1948, as duly qualified medical practitioners: Downs, Barry Geoffrey, M.B., B.S., 1954 (Univ. Queensland); Stuart, Kingston David, M.B., B.S., 1954 (Univ. Queensland), Parle, Francis Sherlock, M.B., 1939, B.S., 1946, and D.P.H. (Univ. Sydney); Mulholland, Gerald Vincent, M.R.C.S. (England), L.R.C.P. (London), 1949, M.B., B.S., 1949 (Univ. London); Feather, Clodagh Mary, M.B., B.S., 1953 (Univ. Sydney); O'Leary, Bridget Patricia, M.B., B.Ch., 1950 (Nat. Univ., Ireland), D.A., R.C.P. and S. (Ireland), 1952; Sim, Robert George Robertson, M.B., B.S., 1953 (Univ. Sydney); Sinnott, John Vergil, L., L.M.R.C.P. (Ireland), L., L.M., R.C.S. (Ireland), 1947; Daniel, Ralph, M.B., B.S., 1953 (Univ. Sydney); Bourke, Geoffrey Merwin, M.B., B.S., 1952 (Univ. Sydney); Taylor, John Bourne, L.R.C.P. (London), M.R.C.PS. (England), 1949, M.B., B.S., 1949 (Univ. London).

The following additional qualifications have been registered: Cooper, Arthur George Stening, F.C.R.A., 1952; Walters, Lynn David, M.R.C.P. (Edinburgh), 1953.

TASMANIA.

THE following have been registered, pursuant to the provisions of *The Medical Acts*, 1939-1948, of Tasmania, as duly qualified medical practitioners: Kirkland, Thomas Speirs, M.B., B.S., 1951 (Univ. Sydney); Palmer, Trevelyan Edward, M.B., B.S., 1952 (Univ. Melbourne); O'Shaughnessy, Desmond James, M.B., B.S., 1952, B.Sc., 1953 (Univ. Melbourne); Grounds, Arthur David, M.B., B.S., 1952 (Univ. Melbourne); Facy, Graham Lyle, M.B., B.S., 1954 (Univ. Queensland); Jagger, Justin Ross, M.B., B.S., 1952 (Univ. Melbourne).

Notice.

SECTION OF PREVENTIVE MEDICINE, VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

THE next meeting of the Section of Preventive Medicine of the Victorian Branch of the British Medical Association will be held in the Medical Society Hall, 426 Albert Street, East Melbourne, on Thursday, May 13, 1954, at 4.30 p.m. Dr. A. A. Ferris, pathologist at Fairfield Hospital, will give an address entitled "Immunization Against Poliomyelitis". Dr. Ferris has recently returned from a trip overseas, where he made a study of the methods of immunization being carried out abroad. All members of the Branch are invited to be present.

ROSS INSTITUTE OF TROPICAL HYGIENE, LONDON.

Lay Course in Tropical Hygiene.

THE annual course for laymen will be held by the Ross Institute, London, from July 26 to 30, 1954. The course covers malaria and its control, and other tropical diseases and problems, such as hookworm, bilharzia, nutrition, housing and sanitation, and protection against heat. It is intended for such people as estate and mine managers and their assistants, missionaries and all those whose work in the tropics makes them responsible for the health and welfare of others. Senior men will find the course of particular value owing to the many developments and great advances in knowledge of these subjects which have taken

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED APRIL 10, 1954.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	6(4)	3(1)	..	..	..	..	..	..	9
Amœbiasis	..	..	..	..	..	..	..	..	..
Ancylostomiasis	..	..	..	..	..	..	1	..	1
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	3(1)	16(14)	6(6)	..	..	..	..	..	25
Diphtheria	7(2)	2	2(1)	..	2(2)	..	..	1	14
Dysentery (Bacillary)	..	6(6)	1	..	2(2)	..	..	..	9
Encephalitis	..	..	1	..	..	..	..	..	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	4	21(11)	..	..	3(3)	..	..	..	28
Lead Poisoning	..	4(4)	..	..	..	..	..	..	4
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	1	..	..	..	..	..	1
Malaria	..	..	1	..	..	..	..	..	1
Meningococcal Infection	2	..	..	..	..	1	..	..	3
Ophthalmia	..	..	..	..	1(1)	..	..	..	1
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	19(8)	16(13)	9(3)	7(4)	16(10)	2	..	..	69
Puerperal Fever	..	..	1	..	..	..	..	..	1
Rubella	..	12(8)	..	..	8(7)	..	1	..	21
Salmonella Infection	..	..	..	..	..	..	..	..	..
Scarlet Fever	13(3)	53(27)	5(2)	8(5)	2(2)	..	..	..	81
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	1(1)	..	..	..	..	..	..	1
Trachoma	..	..	..	..	..	..	..	..	..
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	40(24)	5(3)	25(4)	14(9)	14(6)	2	..	..	100
Typhoid Fever	1	..	..	..	..	..	..	..	1
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

place in recent years. There is no fee for the course. Further information may be obtained from L. G. Ponsford, Esq., Organizing Secretary, Ross Institute of Tropical Hygiene, London School of Hygiene and Tropical Medicine, Keppel Street (Gower Street), London, W.C.1.

COLLEGE OF GENERAL PRACTITIONERS (NEW SOUTH WALES REGIONAL FACULTY).

A MEETING of members of the New South Wales Regional Faculty of the College of General Practitioners will be held in the Robert H. Todd Assembly Hall, British Medical Association House, 135 Macquarie Street, Sydney, on Friday, May 7, 1954, at 8 p.m. All general practitioners are invited to attend.

Nominations and Elections.

THE undermentioned have been elected as members of the New South Wales Branch of the British Medical Association: Blow, John Sydney, M.B., B.S., 1954 (Univ. Sydney); Broughton, Peter William Stafford, M.B., B.S., 1954 (Univ. Sydney); Conaghan, John Peter, M.B., B.S., 1954 (Univ. Sydney); Cummings, Noel, M.B., B.S., 1954 (Univ. Sydney); Higgs, Ralph Crawford, M.B., B.S., 1954 (Univ. Sydney); Hillman, Henry Samuel, M.B., B.S., 1954 (Univ. Sydney); Johnson, Peter Arundel, M.B., B.S., 1954 (Univ. Sydney); Lucas, Noel Alfred, M.B., B.S., 1954 (Univ. Sydney); Marshall, William Courtenay, M.B., B.S., 1954 (Univ. Sydney); Rugless, Eric, M.B., B.S., 1954 (Univ. Sydney); Sarfaty, Gordon, M.B., B.S., 1954 (Univ. Sydney); Saxton, John, M.B., B.S., 1954 (Univ. Sydney); Selby, Theodore, M.B., B.S., 1954 (Univ. Sydney); Walker, William Downing, M.B., B.S., 1954 (Univ. Sydney); Wilken, Judith Lawes, M.B., B.S., 1954 (Univ. Sydney); Wright, Jean, M.B., B.S., 1954 (Univ. Sydney); Pratt, Hugh Bradbury, M.B., Ch.B., 1953 (Univ. New Zealand); Manass, Viktoria, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1953; Morgenstern, Herman, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1953; Petersons, Zigrida, registered in accordance with the provisions of Section 17 (1) (*c*) of the *Medical Practitioners Act*, 1938-1953.

Medical Appointments.

Dr. J. A. O'Brien has been appointed honorary clinical assistant to the surgical section at the Royal Adelaide Hospital.

Dr. D. G. Mackie has been appointed associate medical officer at the Royal Adelaide Hospital.

Dr. J. W. Rollison has been appointed a member of the board of management of the Western Districts Public Hospital, South Australia.

Dr. N. Halloran has been appointed registrar of the Northfield Wards of the Royal Adelaide Hospital.

Dr. C. G. Wilson has been appointed resuscitation registrar of the Royal Adelaide Hospital.

Dr. H. G. Wallace has been appointed chairman of the Nurses' Registration Board of New South Wales.

The following have been appointed members of the Nurses' Registration Board of New South Wales: Dr. D. S. Fraser, Professor B. T. Mayes (nominated by the University of Sydney), Dr. V. M. Coppleson (nominated by the Post-Graduate Committee in Medicine in the University of Sydney), Dr. A. B. Lilley (representing the Hospitals Commission of New South Wales), Dr. H. Selle (nominated by the Minister for Health).

The designation of the position of Health Officer (Industrial Hygiene), Department of Health and Home Affairs, Brisbane, held by Dr. Douglas Gordon, has been changed to Director of Industrial Medicine, Department of Health and Home Affairs, in pursuance of the provisions of *The Public Service Acts*, 1922-1953.

Dr. Peter Victor Kalinovsky has been appointed Quarantine Officer of Edithburgh, South Australia, pursuant to the provisions of the *Quarantine Act*, 1908-1950.

Deaths.

THE following deaths have been announced:

HALL.—Thomas Mervyn Seyde Hall, on April 10, 1954, at Toowoomba, Queensland.

WALKER.—Addie Walker, on April 20, 1954, at Sydney.

Diary for the Month.

MAY 1.—Victorian Branch, B.M.A.: Country Branch Meeting.
MAY 4.—New South Wales Branch, B.M.A.: Organization and Science Committee.
MAY 5.—Victorian Branch, B.M.A.: Clinical Meeting.
MAY 5.—Western Australian Branch, B.M.A.: Council Meeting.
MAY 7.—Queensland Branch, B.M.A.: General Meeting.
MAY 11.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
MAY 14.—Queensland Branch, B.M.A.: Council Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federal Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178 North Terrace, Adelaide): All Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Tasmania: Part-time specialist appointments for the north-west coast of Tasmania.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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